
National Park Service
U.S. Department of the Interior
Abraham Lincoln Birthplace National
Historical Park



Environmental Assessment

**Rehabilitate Historic Lincoln Tavern and Upgrade
Facilities at Boyhood Home Unit**

November 2010



**U.S. Department of the Interior
National Park Service**

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**Abraham Lincoln Birthplace National Historical Park
LaRue County, Kentucky**

November 2010

Summary

The National Park Service proposes to develop new visitor use facilities at the Boyhood Home Unit of Abraham Lincoln Birthplace National Historical Park, Kentucky. The principal component of the proposed action would involve rehabilitating and restoring the historic Lincoln Tavern for use as a visitor contact station. This work would be accompanied by additional tasks, including upgrading trails and installing new walkways and an expanded parking area.

Two alternatives are considered in this environmental assessment (EA):

Alternative A (the No Action / Continue Current Management Alternative):

Under this alternative, the National Park Service would maintain the status quo. NPS would continue periodic inspections of the exterior and interior conditions of the tavern to identify and assess possible safety hazards as well as leaking roof sections, drainage problems, broken windows, signs of rodent and insect infestation, and vandalism. Minor repairs would be made as problems are reported. Similarly, no new improvements to the site, e.g., re-design of the parking area, installation of walkways, restoration of trails and roadbeds, would take place for the benefit of visitors. The existing parking area would be retained in its current configuration and be repaired as needed.

Alternative B (Rehabilitate the Historic Lincoln Tavern and Upgrade Facilities at Boyhood Home Unit) (Preferred Alternative):

Under Alternative B, the National Park Service would develop additional visitor-use facilities at the Boyhood Home Unit of Abraham Lincoln Birthplace National Historical Park. The principal feature of this alternative is the proposed restoration and rehabilitation of the historic Lincoln Tavern. Once rehabilitated, the historic Lincoln Tavern would be used as a visitor contact station. This alternative would also involve the development or improvement of visitor use facilities in other parts of the Boyhood Home Unit. Specific actions would include modification of the parking area to enhance visitor

safety, improvement and restoration of existing or former trails, especially the Overlook and the section of the Lincoln Memorial Trail located in the park, as well as installation of connecting walkways and a garden near the historic Lincoln Tavern. Connecting trails in the vicinity of the tavern would be handicapped accessible.

Alternative B is the preferred alternative of the National Park Service.

This EA evaluates the effects of these alternatives on natural and cultural resources, as well as on visitor experience, public safety, and park operations. Among other benefits, rehabilitating the historic Lincoln Tavern and upgrading visitor use facilities would improve the condition of an important park resource and greatly enhance the visitor experience. The alternatives analyzed in this environmental assessment would not result in major environmental impacts or impairment to park resources or values.

Note to Reviewers and Respondents

Reviewers should provide their comments on the EA during the review period described below. This will allow the National Park Service to analyze and respond to comments at one time, thus avoiding undue delay in the decision-making process. Reviewers are encouraged to structure their participation in the National Environmental Policy Act process so that it is meaningful and alerts the agency to the reviewer's position and contentions. Comments on the EA should be specific and should address the adequacy of the analysis and the merits of the alternatives discussed. See 40 CFR 1503.3.

Comments on this EA must be delivered or postmarked no later than **December 17, 2010**. If you wish to comment on this EA, electronic comments are preferred. The National Park Service's Planning, Environment, and Public Comment (PEPC) web site and an email address are both available for this purpose:

PEPC: <http://parkplanning.nps.gov/abli>
E-mail: ABLI_Superintendent@nps.gov.

Mailing Address: Superintendent, Abraham Lincoln Birthplace National Historical Park,
2995 Lincoln Farm Road, Hodgenville, KY 42748-9707

Important Notice: Before including your address, phone number, e-mail address, or other personal identifying information in your comment, you should be aware that your entire comment – including your personal identifying information – may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

1.0 PURPOSE AND NEED FOR ACTION

1.1 Introduction

In December 1808, for \$200 cash and the assumption of a small debt of the previous owner, Thomas Lincoln purchased the Sinking Spring farm near present day Hodgenville, Kentucky. Abraham Lincoln was born here on February 12, 1809. A portion of the original Sinking Spring farm lands were established as Abraham Lincoln National Park by Congress on July 17, 1916. These first lands designated for protection – now known as the Birthplace Unit of Abraham Lincoln Birthplace National Historic Site – are 3 miles south of Hodgenville and about 50 miles south of Louisville, on U.S. Highway 31E in LaRue County in west-central Kentucky.

In 1811, due to an ongoing legal struggle regarding a prior land claim asserted on the Sinking Spring farm, the Lincolns with two-year-old Abraham relocated to the Knob Creek farm, a few miles away. At the time the 230-acre farm at Knob Creek was owned by a George Lindsey. Thomas Lincoln leased 30 acres of Lindsey's property. The Lincolns remained on the Lindsey property – now known as the Boyhood Home Unit of Abraham Lincoln Birthplace National Historical Park – until 1817, when Thomas Lincoln, frustrated by ongoing legal battles due to Kentucky land titles, moved his family to Indiana when Abraham was about eight years old.

In 1931, Hattie and Chester Howard purchased the boyhood home site and operated it as a private memorial to Abraham Lincoln. The Howards soon constructed a replica pioneer cabin at the site using logs from the extant Gollaher family cabin nearby, which was said to resemble Lincoln's boyhood home. The reconstructed cabin was placed on what was believed to have been the site of the original Lincoln cabin home at Knob Creek. In 1933, the family constructed a roadside tavern building to serve the new and growing automobile tourist trade. The tavern became a popular dance hall and nightclub and was later converted to a restaurant and gift shop.

In 1988, the boyhood home site was listed on the National Register of Historic Places, with the period of significance being identified as 1925 to 1949. The site was listed in the Register due to its importance as an artifact of the early days of automobile tourism.

In 1998 Congress expanded the boundary of Abraham Lincoln Birthplace National Historic Site and authorized the Secretary of the Interior to acquire, by donation, about 228 acres of land of the historic Knob Creek Farm. This property, about 10 miles from the Birthplace Unit, became a part of the historic site on November 6, 2001. The park was subsequently redesignated Abraham Lincoln Birthplace National Historical Park on March 30, 2009.

The Boyhood Home Unit currently protects the historic roadside tavern, the replica pioneer cabin, agricultural fields, and forested areas evocative of the five-year period that the Lincolns lived there before moving to Indiana.

1.2 Purpose and Need for the Project

The National Park Service (NPS) is considering a proposal to further develop the Boyhood Home Unit of Abraham Lincoln National Historical Park. The purpose of this project is to provide improved facilities for visitor use and understanding of Abraham Lincoln's boyhood home. If the project is approved, the National Park Service would preserve and rehabilitate the 1930s-era historic Lincoln Tavern for use as a visitor contact station, remove the temporary visitor contact station currently in use, develop a safer parking area, improve and restore trails – especially the Overlook and Lincoln Memorial trails – and construct new walkways at the site, including a link between the historic Lincoln Tavern and the replica pioneer cabin.

National Park Service *Management Policies 2006* and *Director's Order 28* stress the need for protection and preservation of significant historic properties. In the case of the Boyhood Home Unit, this would include the historic Lincoln Tavern and the replica pioneer cabin. The park's General Management Plan (GMP) (2006a), Comprehensive Interpretive Plan (in prep.), and Resource Stewardship Strategy (in prep.) all call for rehabilitation and restoration of the historic Lincoln Tavern and replica cabin. While the replica cabin has recently been restored, the historic Lincoln Tavern still needs a considerable amount of work in accordance with the approved Historic Structures Report (NPS 2006b) for the site. At present, safety concerns have led this historic building to be closed to visitor use, and only authorized personnel are allowed to enter the building. The result is that the optimum visitor experience at the park is not being offered. As a crucial and integral part of the park story, the historic Lincoln Tavern needs to be open to visitors. However, given its present condition, visitors cannot enter the building nor fully appreciate its historic significance.

The shortcomings described above must be addressed for the project to be considered a success. The specific project purposes are:

- Rehabilitate the historic Lincoln Tavern and maintain compatibility with other historic park structures;
- Protect public and employee health, safety, and welfare by meeting Occupational Safety and Health Administration standards for safety; and
- Provide enhanced visitor access, interpretation, and educational opportunities at the Boyhood Home Unit, including access to the historic Lincoln Tavern, for a broader understanding of the site's historic significance.

This project is needed because only limited or substandard visitor use facilities are currently available at the Boyhood Home Unit. The historic Lincoln Tavern is closed for safety reasons, the visitor contact station is housed in a temporary facility, and the parking area has safety issues and is not adequate to handle anticipated visitation. Implementing the proposed action will preserve an important National Register structure (the tavern), improve visitor interpretative and accessibility opportunities, protect public and employee health, safety and welfare, and improve park operational efficiency.

An environmental assessment (EA) analyzes the proposed action and alternatives in order to determine their impacts on the environment. This EA analyzes the no action alternative (i.e., continue current management) and one action alternative (Rehabilitate the Historic Lincoln Tavern and Upgrade Facilities at Boyhood Home Unit). This EA has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969; Council on Environmental Quality regulations for implementing the National Environmental Policy Act (40 *Code of Federal Regulations* Parts 1500-1508); National Park Service's *Director's Order (DO) #12 and Handbook: Conservation Planning, Environmental Impact Analysis, and Decision Making* (NPS 2001); and the National Historic Preservation Act of 1966 and its implementing regulations at 36 *Code of Federal Regulations* 800.

The proposed treatments to the historic tavern structure would be designed to ensure compliance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties* (NPS 1995b). Under these standards, there are four distinct, but interrelated, approaches to the treatment of historic properties – Preservation, Rehabilitation, Restoration, and Reconstruction. *Preservation* focuses on the maintenance and repair of existing historic materials and retention of a property's form as it has evolved over time. *Rehabilitation* acknowledges the need to alter or add to a historic property to meet continuing or changing uses while retaining the property's historic character. *Restoration* is undertaken to depict a property at a particular period of time in its history, while removing evidence of other periods. *Reconstruction* re-creates vanished or non-surviving portions of a property for interpretive purposes. The treatments chosen for the historic Lincoln Tavern would be based on a variety of factors, including the historical significance of the building, its physical condition, proposed use, and enhanced interpretive potential.

1.3 Park Purpose and Significance

Abraham Lincoln National Historical Park was established on July 17, 1916. The park was administered by the War Department until August 10, 1933, when it was transferred to the National Park Service. The park commemorates the birth and early life of Abraham Lincoln and interprets the relationship of his background and pioneer environment to his service to his country as President.

The legislated purpose of Abraham Lincoln Birthplace National Historical Park is to:

- Protect and preserve the significant resources of the birthplace of Abraham Lincoln, especially the Log Cabin, Memorial Building, lands and related features.
- Protect and preserve the significant resources associated with the Knob Creek Farm and the early boyhood of Abraham Lincoln.
- Commemorate the birth and early life of Abraham Lincoln and interpret the relationship of his background and pioneer environment to his service for his country as president of the United States during the crucial years of the Civil War.

Abraham Lincoln Birthplace National Historic Site is nationally significant for the following reasons:

- This is the birthplace and early boyhood home of the 16th president of the United States who successfully preserved the Union through the turmoil of the Civil War.
- The park protects a formal landscape and the memorial building that was constructed by the Lincoln Farm Association through popular subscription to formally enshrine and preserve a symbolic birthplace cabin.
- The Boyhood Home Unit at Knob Creek preserves the setting and resources of Abraham Lincoln's early character-building years (1811-1816).
- The Boyhood Home Unit protects unusually diverse and abundant flora in the Piedmont Region representative of the mixed mesophytic forest community along with cedar glades.

1.4 Project Background, Other Projects and Plans, Objectives, Scoping, and Value Analysis

1.4.1 Project Background

The NPS acquired the Boyhood Home Unit via donation on November 6, 2001. In the intervening nine years, the NPS has established a temporary visitor contact station, constructed hiking trails, preserved and reconstructed the replica boyhood cabin, and installed interpretive wayside exhibits. The current project aims to supplement these projects by rehabilitating and restoring the exterior and interior of the historic Lincoln Tavern for use as a permanent visitor contact station. The project also envisions the development of additional incidental visitor use facilities in the vicinity of the tavern and the replica cabin. The result would be long term preservation of an important National Register property and enhancement of visitor use and enjoyment of the Boyhood Home Unit.

In order to allow the tavern to be opened as a visitor contact station, various modifications would be required, including: installation of new mechanical, plumbing, and wiring systems; rehabilitation and restoration of interior spaces; and accessibility improvements. In addition, a fire detection/suppression system would need to be installed to forestall loss of the building from fire, and to reduce threats to adjacent resources, visitors, and staff. Opening the tavern as a visitor contact station would allow visitors to gain a better understanding of the role the building played in the history of the Boyhood Home Unit. Rehabilitation and restoration would also enable the park to meet its preservation goals under the Government Performance and Results Act (GPRA) (Public Law 103-62).

1.4.2 Other Projects and Plans

The proposed development project would be consistent with the Abraham Lincoln Birthplace NHP General Management Plan (NPS 2006a). This document is the primary planning guide for Abraham Lincoln Birthplace NHP. All other planning documents must conform with and tier from the general management plan. In particular, rehabilitation and restoration of the historic Lincoln Tavern under the proposed action supports the purpose

of the Boyhood Home Unit as defined in the general management plan, which is “to protect and preserve the significant resources associated with the Knob Creek farm and the early boyhood of Abraham Lincoln” (NPS 2006a).

Other projects and plans that the National Park Service has in place, in progress, or planned for the near future may affect decisions regarding this development project. As part of the analysis and consideration of potential direct, indirect, and cumulative impacts, the project team identified the following plans that may affect the project area.

Fire Management Plan – The park has prepared and periodically updates a fire management plan and environmental assessment. The most recent update occurred in 2009. Fire suppression and mechanical fuels treatment are the two principal tools in the plan. Both are used to maintain the historic landscape of the park.

Resource Stewardship Plan – The park is currently developing a resource stewardship plan. This plan, which is scheduled to be completed in early 2011, will guide the park in achieving desired future conditions for resources as established in the general management plan.

1.4.3 Objectives

The preservation of vital cultural and natural resources, as well as the protection of public health and safety, are mandated by National Park Service policy. The primary objectives of this proposed action were determined by park and regional staff, and were integral in the development of the plan to stabilize and restore the historic Lincoln Tavern and provide additional facilities for visitor use. The objectives of this action are to:

- Preserve and maintain the integrity of this National Register property and retain compatibility with other historic park structures,
- Improve and enhance visitor interpretation and educational opportunities, including access to the historic Lincoln Tavern for a broader understanding of its place in American history,
- Protect public and employee health, safety and welfare by meeting Occupational Safety and Health Administration standards for safe and effective entry and exit, and by reducing the need for hazardous maintenance activities,
- Improve the park’s operational efficiency and sustainability and meet goals established pursuant to the Government Performance and Results Act, and
- Provide additional opportunities for visitor use and enjoyment of the more remote portions of the park.

1.4.4 Scoping

National Park Service internal discussions led to identification of the main issues and impact topics to be addressed in this environmental assessment. The U.S. Fish and Wildlife Service was contacted regarding endangered and threatened species compliance for this project. The U.S. Fish and Wildlife responded on May 17, 2010 that two federally

endangered bat species (Indiana bat and gray bat) have the potential to occur in the project area.

Over the past few years, the Kentucky State Historic Preservation Officer (SHPO) has been consulted regarding a number of projects occurring at the park, including the restoration and reconstruction of the replica boyhood cabin and the proposed rehabilitation of the historic Lincoln Tavern. By letter dated November 24, 2009, the SHPO stated that a draft plan for rehabilitating the tavern submitted to the National Park Service Development Advisory Board would have no adverse effect on historic properties. Thereafter, the park sent the SHPO a followup Section 106 consultation letter describing the expanded development project that is the subject of this EA. This letter, which was sent to the SHPO on May 7, 2010, invited continuing agency participation. The SHPO responded in a letter dated June 2, 2010, acknowledging the expanded scope of the project and asking to receive a copy of the completed EA for agency review.

This environmental assessment will be sent to relevant agencies for their review and comment, and agency comments on the project will be addressed in the final compliance documents. As part of the ongoing compliance, the park also will seek formal SHPO review and concurrence with the National Park Service determination of project effect. Copies of letters received from the above regulatory agencies are contained in Appendix A.

A summary of the consultation and coordination efforts for this project may be found in the “Consultation and Coordination” section of this environmental assessment.

1.4.5 Value Analysis

A value analysis for the tavern rehabilitation portion of this project was conducted by the National Park Service from April 30 – May 1, 2009, and was facilitated by GWWO, Inc./Architects. During the value analysis process, an interdisciplinary planning team refined and evaluated design options. The process helped to ensure that all viable project alternatives were considered, evaluation factors were sound, solutions were cost effective, an independent opinion was provided, and all National Park Service objectives were satisfied by the chosen alternative. Potential impacts to the natural environment were also assessed.

The value analysis effort focused on three pre-design (conceptual) alternatives that had been previously developed as a result of a workshop held January 20-21, 2009. The value analysis study team further developed these three suitable conceptual alternatives and then subjected them to full analysis using the Choosing by Advantages (CBA) process. During the CBA process, the most expensive alternative was eliminated and one additional alternative was developed. This new alternative exploited advantages from the other alternatives under consideration, and became the basis of the preferred alternative described later in this environmental assessment as Alternative B. See Section 2.7 below for additional information.

1.5 ISSUES, CONCERNS, AND DERIVATION OF IMPACT TOPICS

1.5.1 Issues and Concerns

Issues and concerns affecting this proposal were identified from past National Park Service planning efforts, and input from state and federal agencies. In addition to meeting the primary objectives of the project, several critical issues have also been identified relative to rehabilitation of the historic Lincoln Tavern. These issues were identified during internal and public scoping for the proposed action.

- The present structural condition of the historic Lincoln Tavern threatens further deterioration of this significant National Register of Historic Places property.
- This old wooden frame structure has no fire blocks in the walls nor a fire detection or sprinkler system, placing it at risk of loss from fire. Should the fire spread, it would threaten visitor and staff safety as well as other park resources.
- Given its present condition, visitors cannot enter the historic Lincoln Tavern nor fully appreciate its historic significance as an integral park of the park story.
- The parking area in front of the historic Lincoln Tavern is too small to accommodate anticipated future use and needs to be modified to improve safety.
- Improvements are needed at the Boyhood Home Unit to improve circulation among its historic features and to better allow visitors to experience its natural resources.

1.5.2 Impact Topics

Based in part on the issues raised during internal scoping, the interdisciplinary team identified a number of resources and values that potentially could be affected by implementation of the proposed action. These resources and values generated “impact topics” for further analysis, selected from the universe of impact topics set forth in Table 1.1. Candidate impact topics were identified based on legislative requirements, executive orders, topics specified in *Director’s Order #12 and Handbook* (NPS 2001), *Management Policies 2006* (NPS 2006c), guidance from the National Park Service, input from other agencies, public concerns, and resource information specific to Abraham Lincoln National Historical Park.

TABLE 1.1
IMPACT TOPICS AND APPLICABLE LEGAL AND POLICY REQUIREMENTS

Impact Topic	Relevant Regulations or Policies
Climate Change	National Park Service Management Policy 1.6 (2006)
Air Quality	Federal Clean Air Act (CAA); CAA Amendments of 1990 (CAAA); National Park Service Management Policy, 4.7.1 (2006)

Aquatic Resources	National Park Service Management Policy 4.6 (2006); Federal Water Pollution Control Act [The Clean Water Act of 1972 (as amended in 1977)]; Magnuson-Stevens Fishery Conservation and Management Act
Hydrology and Water Quality	Executive Order 12088 (Federal Compliance with Pollution Control Standards); Executive Order 11990 (Protection of Wetlands); National Park Service Management Policy 4.6.3 (2006); Federal Water Pollution Control Act [The Clean Water Act of 1972 (as amended in 1977)]
Floodplains and Wetlands	Executive Order 11990 (Protection of Wetlands); Clean Water Act Section 404; National Park Service Director's Order #77-1; Executive Order 11988 (Floodplain Management); Federal Coastal Zone Management Act; National Park Service Management Policies 4.6.4, 4.6.5, and 9.1.1.6 (2006)
Geology	National Park Service Management Policy 4.8 (2006)
Soils	National Park Service Management Policy 4.8.2.4 (2006)
Vegetation	National Park Service Management Policy 4.4.2 (2006) ; Executive Order 13112 (Invasive Species)
Fish and Wildlife	National Park Service Management Policy 4.4.2 (2006); Executive Order 13186 (Migratory Birds)
Species of Special Concern and their Habitats	Endangered Species Act of 1973; National Park Service Management Policy 4.4.2.3 (2006); 40 Code of Federal Regulations 1500 (regulations for implementing the National Environmental Policy Act)
Ecologically Critical Areas or other Unique Natural Resources	36 Code of Federal Regulations 62 (criteria for national natural landmarks); National Park Service Management Policies (2006)
Natural Soundscape/Noise	National Park Service Management Policy 4.9 (2006)
Natural Lightscape (night sky)	National Park Service Management Policy 4.10 (2006)

Cultural Resources (i.e., important scientific, archeological, and other cultural resources, including historic properties listed or eligible for the National Register of Historic Places)	Section 106 of the National Historic Preservation Act (16 U.S.C. 470 et seq.); Section 110 of the National Historic Preservation Act; 36 Code of Federal Regulations 800; Secretary of the Interior’s Standards for the Treatment of Historic Properties (36 CFR Part 68); National Environmental Policy Act (42 U.S.C. 4321 et seq.); Executive Order 13007 (Indian Sacred Sites); National Park Service Director’s Order 28; National Park Service Management Policy 5.3.5 (2006); Native American Graves Protection and Repatriation Act (NAGPRA); Archeological Resources Protection Act (ARPA); National Parks Act of August 25, 1916 (“Organic Act”); Antiquities Act of 1906; 40 CFR 1500 (regulations for implementing National Environmental Policy Act), section 1508.27
Sacred Sites	Executive Order 13007 (Indian Sacred Sites); National Park Service Management Policy 5.3.5.3.2 (2006)
Indian Trust Resources	Department of the Interior Secretarial Order No. 3206; Secretarial Order No. 3175
Visitor Use and Experience	National Parks Act of August 25, 1916 (“Organic Act”); National Park Service Management Policy 8.2 (2006)
Public Health and Safety	National Park Service Management Policy 8.2.5 (2006); U.S. Coast Guard Boating Safety Regulations
Park Operations	National Park Service Management Policy 9.1 (2006)
Concessionaires and Contracts	National Park Service Management Policy 10.2 (2006)
Economics and Socioeconomics	40 Code of Federal Regulations 1500 (regulations for implementing National Environmental Policy Act)
Transportation (local and regional)	National Park Service Management Policy 9.2 (2006)
Socially or Economically Disadvantaged Populations	Executive Order 12898 (Environmental Justice)
Accessibility for Individuals with Disabilities	National Park Service Management Policy 9.1.2 (2006); Architectural Barrier Act of 1968 (42 U.S.C. 4151 et seq.); Rehabilitation Act of 1973 (29 U.S.C. 701 et seq.); Americans with Disabilities Act of 1990 (Public Law 101-336, 104 Stat. 327); Uniform Federal Accessibility Standards
Mineral and Agricultural Resources	National Park Service Management Policy 8.7 and 8.6.7 (2006)

Prime and Unique Agricultural Lands	Council on Environmental Quality 1980 memorandum on prime and unique farmlands; 40 Code of Federal Regulations 1500 (regulations for implementing National Environmental Policy Act), section 1508.27
Energy Requirements and Conservation Potential; Natural or Depletable Resource Requirements and Conservation Potential	National Park Service Management Policy 9.1.7 (2006) ; 40 CFR 1500 (regulations for implementing National Environmental Policy Act), section 1502.16
Urban Quality, Historic and Cultural Resources, and Design of the Built Environment	40 Code of Federal Regulations 1502.16 (regulations for implementing the National Environmental Policy Act); National Park Service Director’s Order #12
Community Character	National Park Service Management Policy 8.11 (2006)
Possible Conflicts between the Proposal and Land Use Plans, Policies, or Controls for the Area Concerned (including local, state, or Indian tribe) and the Extent to which the Park Would Reconcile the Conflict	40 Code of Federal Regulations 1500 (regulations for implementing National Environmental Policy Act), sections 1502.16, 1506.2(d))

All of the impact topics listed above were presented and discussed by the planning team during the scoping process. At the end of this process, the planning team selected a subset of these topics for detailed analysis in the EA, as discussed in more detail below.

1.5.3 Impact Topics Analyzed in this Environmental Assessment

Regulations issued by the Council on Environmental Quality require the National Park Service to “identify and eliminate from detailed study the issues which are not significant or which have been covered by prior environmental review . . . , narrowing the discussion of these issues in the statement to a brief presentation of why they will not have a significant effect on the human environment or providing a reference to their coverage elsewhere” (40 CFR 1501.7(a)(3)).

Of the impact topics initially listed, the following were considered environmental issues warranting further study, and are carried through the EA for detailed analysis:

- Historic structures
- Cultural landscapes
- Soils
- Vegetation
- Public health and safety

- Visitor use and experience, including accessibility for individuals with disabilities
- Park operations and management
- Energy requirements and conservation potential (This impact topic will be dealt with under the heading “Sustainability and Long-term Management.” See section 3.6.7 below.)

1.5.4 Impact Topics Dismissed from Detailed Analysis with Rationale for Dismissal

The resource topics described in this section will not be included or evaluated in this environmental assessment. These impact topics were not identified during scoping as being of concern. Additional reasons for their dismissal are provided below.

Climate change: Due to the small scale of the project and the negligible amount of carbon emissions likely to be generated, neither the restoration and rehabilitation of the historic Lincoln Tavern nor the upgrading of related on-site facilities would have a measurable impact on climate change. Similarly, ongoing climate change would not affect the tavern or related facilities in any appreciable way.

Air quality: During construction activities for the proposed action, there would be highly localized, short-term, negligible impacts on air quality due to the small scale of the project, and because best management practices would be used to minimize fugitive dust and emissions from construction equipment.

Hydrology and water quality. The nature of the proposed action (small-scale construction with minor soil disturbance), combined with the flat terrain of the main project area, is such that the action would have no or negligible effects on hydrology or water quality. Best management practices would be employed to minimize any adverse effects to water quality during construction.

Floodplains and wetlands: Executive Orders 11988 and 11990, “Floodplain Management” and “Wetlands,” respectively, require analysis of impacts on floodplains and regulated wetlands. None of the alternatives would occur within or affect a floodplain. While Knob Creek and immediately adjacent bankside areas are within the 100-year floodplain, flood insurance maps published by the Federal Emergency Management Agency (FEMA) indicate that the historic Lincoln Tavern, the parking area, and other areas proposed for improvement fall outside the regulated floodplain. Similarly, there are no wetlands regulated under the provisions of Section 404 of the Clean Water Act, or areas designated as wetlands using the classification system approved by the National Park Service, within the areas potentially affected by the project.

Ecologically critical areas or other unique natural resources: Abraham Lincoln Birthplace National Historical Park does not contain any designated ecologically critical areas, wild and scenic rivers, or other unique natural resources, as referenced in 40 *Code of Federal Regulations* 1508.27.

Endangered, threatened, or protected species and critical habitats: Coordination with the U.S. Fish and Wildlife Service (USFWS) and the Kentucky Department of Natural Resources has revealed that the endangered gray bat (*Myotis grisescens*) and Indiana bat (*Myotis sodalis*) “are known to occur or have the potential to occur within the area of interest” (see letter from USFWS dated May 17, 2010 in Appendix A). According to the USFWS:

Summer roost and/or winter habitat for the endangered Indiana bat may exist within the area of interest. Based on this information, we believe that: (1) forested areas on the vicinity of and on the [Boyhood Home Unit] may provide potentially suitable summer roosting and foraging habitat for the Indiana bat; and (2) caves, rockshelters, and abandoned underground mines in the vicinity of and on the [Boyhood Home Unit] may provide potentially suitable wintering habitat (hibernacula) for the Indiana bat. Our belief that potentially suitable habitat may be present is based on the information provided in ... correspondence [received from NPS], the fact that much of the project site and/or surrounding areas contain forested habitats that are within the natural range of this species, and our knowledge of the life history characteristics of the species.

The area of interest may be inhabited by the federally endangered gray bat. The gray bat may utilize low flow stream corridors of Knob Creek as foraging habitat. Potential gray bat hibernacula / summer roost habitat (*i.e.*; caves, rock shelters, and abandoned mines) may also occur within the area of interest.

Should the proposed project require alteration of habitat that coincides with the habitat required for the Indiana bat and/or the gray bat further consultation with the Service should occur to ensure that the proposed project is in full compliance with the [Endangered Species Act].

Research by the National Park Service (NPS Cumberland/Piedmont Inventory & Monitoring Network) has resulted in one confirmed sighting of the grey bat at the Boyhood Home Unit, but no sightings of the Indiana bat. In any event, preferred roosting and hibernating habitat, to the extent they exist at the unit, would not be adversely affected by the proposed project, the great majority of which will take place in previously cleared areas that are currently occupied by man-made structures or features. It is possible that the Boyhood Home Unit is used as foraging habitat by one or both of these species, but here again, the bulk of the proposed project would take place in a small (three acres), previously disturbed and occupied area immediately adjacent to U.S. Highway 31E. Some trail re-clearing and improvement would take place in the “backcountry,” but impacts to foraging habitat are expected to be negligible. There is thus little likelihood of adverse effect on the foraging activities of these endangered species. Accordingly, this impact topic will not be addressed in detail in this EA.

Statement under Section 7 of the Endangered Species Act: The National Park Service has determined that the proposed action may affect, but is not likely to

adversely affect, any federally threatened or endangered species. A copy of this EA will be sent to the USFWS with a request for written concurrence with this determination.

Wildlife. The bulk of the project area is a previously cleared 3-acre site adjacent to U.S. Highway 31E. This area is occupied by various existing structures. This area sees little use by wildlife apart from squirrels and some common songbirds. Impacts to wildlife from new construction and long-term site modification would be negligible. Therefore, this topic will not receive detailed analysis in this EA.

Wilderness: There are no designated wilderness areas within Abraham Lincoln Birthplace National Historical Park.

Natural soundscapes: Because of its proximity to U.S. Highway 31E, there is little expectation by visitors of experiencing a natural soundscape in areas adjacent to the historic Lincoln Tavern and parking area. Short-term noise generated by small-scale construction equipment associated with rehabilitation of the house would noticeably change the ambient levels of human-caused noise that are typical in the park's rural environment, but only for a short period of time. The project would not have any long-term effects on noise levels in the area.

Conflicts with land use plans, policies, or controls: Whenever actions taken by the National Park Service have the potential to affect the planning, land use, or development patterns on adjacent or nearby lands, the effects of these actions must be considered. None of the alternatives addressed in this assessment would have the potential to affect other land use plans, policies, or controls.

Archeological resources: The potential for finding *in situ* prehistoric or historic archeological remains at the historic Lincoln Tavern, the parking area, and surrounding area is very low. The NPS Southeast Archeological Center (SEAC) conducted archeological testing in this area in 2004 and 2008 and found no significant archeological resources. A SEAC trip report from 2008 concludes as follows:

Unfortunately, though several artifacts that could date to the Lincoln occupation of the site were recovered during the shovel testing east of Highway 31E, no substantial archeological evidence for their presence was uncovered. The ground penetrating radar survey conducted in the new survey area also failed to identify any buried features associated with the Lincolns. This recent work, combined with the results from the 2004 project represent an intensive and detailed search for the Lincoln occupation, but, other than a few artifacts that may date to the Lincoln time period (but may have been deposited during any later historic period), no archeological features associated with such an occupation have been found. We are forced to conclude that in all likelihood, any Lincoln features that may have survived into recent history have been destroyed by the construction of Highway 31E, or the tavern and its associated parking lots. There are no historic

archeological resources present in the project area that could be considered eligible for the National Register of Historic Places.

.....

None of the subsurface investigation ... during this project or the 2004 project identified any prehistoric or historic archeological features. Also, no prehistoric diagnostic artifacts were recovered at the site save a single Archaic Period point that was found out of context at the edge of Knob Creek. Lithic material was recovered at depths of two meters below the ground surface, but it was found in gravel strata apparently deposited by running water. It is the conclusion of SEAC that the ABLI-2 site that covers the entirety of the Knob Creek floodplain within the park remains indicative of prehistoric lithic procurement for stone tool production during the Archaic Period (8000 B.C. - 1000 B.C.), and probably throughout the rest of prehistory as well. However, the dearth of subsurface features and the likelihood that the lithic material recovered during the survey was deposited during natural flooding episodes and therefore does not represent *in-situ* material, leads us to conclude that the site is not eligible for the National Register of Historic Places. The proposed development at the Knob Creek Unit does not threaten any significant archeological resources.

(SEAC 2008). Therefore, archeological resources will not be addressed in detail in this EA. Nevertheless, the mitigation measures spelled out in this EA (see below) describe the measures to be taken in the unlikely event that archeological resources are discovered during the course of the project.

Paleontological resources: There no known paleontological resources in the immediate project area.

Ethnographic resources: Park ethnographic resources are the cultural and natural features of a park that are of traditional significance to traditionally associated peoples. These peoples are the contemporary park neighbors and ethnic or occupational communities that have been associated with a park for two or more generations (40 years), and whose interests in the park's resources began before the park's establishment. Living peoples of many cultural backgrounds—American Indians, Inuit (Eskimos), Native Hawaiians, African Americans, Hispanics, Chinese Americans, Euro-Americans, and farmers, ranchers, and fishermen—may have a traditional association with a particular park. Traditionally associated peoples generally differ as a group from other park visitors in that they typically assign significance to ethnographic resources—places closely linked with their own sense of purpose, existence as a community, and development as ethnically distinctive peoples. These places may be in urban or rural parks and support ceremonial activities or represent birthplaces of significant individuals, group origin sites, migration routes, or harvesting or collecting places.

There are several types of studies and research that the National Park Service uses to determine the extent of ethnographic resources in a particular park. The most comprehensive background study, the Ethnographic Overview and Assessment, reviews

existing information on park resources traditionally valued by stakeholders. The information comes mostly from archives and publications. Interviews with community members and other constituents—often on trips to specific sites—can supply missing data. This study also identifies the need for further research. Abraham Lincoln National Historical Park has not yet been the subject of such an assessment and therefore the existence (or non-existence) of ethnographic resources is not documented. However, none of the alternatives in this EA are expected to have adverse impacts on any such traditional attachments. If anything, impacts to ethnographic resources will be beneficial in that the historic Lincoln Tavern, which is a place of great significance to the local community and has been for several decades, will be restored and rehabilitated so that it can once more be opened to the public. For all of the foregoing reasons, ethnographic resources will not be retained for further analysis in this EA.

Museum collections. Currently there are no museum collections housed within the historic Lincoln Tavern or any other structure at the Boyhood Home Unit. None of the park’s museum collections would be affected by implementation of any alternative.

Indian trust resources: Indian trust assets are owned by American Indians but are held in trust by the United States. According to Abraham Lincoln National Historical Park staff, Indian trust assets do not occur within the park. Therefore, there would be no effects on Indian trust resources from any of the alternatives.

Socioeconomic environment: Council on Environmental Quality regulations for implementing the National Environmental Policy Act (NEPA), 40 CFR 1500, direct economic analyses of federal actions that will affect local or regional economies. None of the alternatives described in this environmental assessment would have notable effects on local or regional economic activities because of their small scale.

Natural or depletable resource requirements and conservation potential: The use of fuel is addressed under the category “Energy requirements and conservation potential.” To the maximum extent possible, the rehabilitation and restoration of the historic Lincoln Tavern would use the original materials. The use of new construction materials that would be incorporated into the building and related structures would not be detectable compared to the volumes of these materials used for other construction in the local area.

Prime and unique agricultural lands: Prime farmland has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops. Unique agricultural land is land other than prime farmland that is used for production of specific high value food and fiber crops. Both categories require that the land is available for farming uses. Lands within Abraham Lincoln National Historical Park are not available for farming and therefore do not meet the definitions.

Environmental justice. Executive Order 12898, "General Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," requires all federal agencies to incorporate environmental justice into their missions by identifying and addressing disproportionately high and adverse human health or environmental

effects of their programs and policies on minorities and low-income populations and communities. None of the alternatives analyzed in this assessment would have disproportionate effects on populations as defined by the U.S. Environmental Agency's 1996 guidance on environmental justice.

2.0 PROJECT ALTERNATIVES

This section of the EA considers two alternatives for addressing visitor use at the Boyhood Home Unit of Abraham Lincoln Birthplace National Historical Park. These alternatives include one “action” alternative and one “no action” alternative. The no action alternative would involve the continuation of current management. The action alternative would implement the management approach outlined in park’s General Management Plan (GMP).

As part of the design analysis and project planning, a range of alternatives was considered. Those actions or alternatives that were not realistically feasible or did not adequately meet the project purpose and need were dismissed. A discussion of the actions or alternatives that were eliminated from further consideration follows the description of the no action alternative and the action alternative.

2.1 Alternative A – No Action (continue current management)

Regulations promulgated by the President’s Council on Environmental Quality (CEQ) require National Park Service to consider a “no action” alternative. The no action alternative serves as a baseline against which to compare the impacts of the other alternatives under consideration.

In the present instance, the No Action Alternative is defined as continuation of current management of the Boyhood Home Unit. Under this alternative, the National Park Service would not attempt to respond to future needs and conditions associated with the tavern, parking area, and surrounding area, but would maintain the status quo. Currently, cyclical maintenance activities include periodic inspections of the exterior and interior conditions of the tavern to identify and assess possible safety hazards as well as leaking roof sections, drainage problems, broken windows, signs of rodent and insect infestation, and vandalism. Minor repairs are made as problems are reported. These actions would continue under Alternative A. Similarly, no new improvements to the site, e.g., re-design of the parking area, installation of walkways, restoration of trails and roadbeds, would take place for the benefit of visitors. The existing parking area would be retained in its current configuration and be repaired as needed.

2.2 Alternative B – Rehabilitate the Historic Lincoln Tavern and Upgrade Facilities at Boyhood Home Unit (preferred alternative)

Under Alternative B, the National park Service would develop additional visitor-use facilities at the Boyhood Home Unit of Abraham Lincoln Birthplace National Historical Park. The principal feature of this alternative is the proposed restoration and rehabilitation of the historic Lincoln Tavern, together with modification of the associated parking area to enhance visitor safety. Specific features related to work at the tavern would include the following:

- Improved safety of the vehicle entrance and exit

- A new parking area in the existing grass island
- A detached comfort station to serve anticipated visitation numbers
- New site electric system, connection to public water, and a new septic system
- Restoration of the existing tavern building exterior
- Incorporation of new ramps and egress doors to bring the building up to current code
- Structural stabilization of the existing building, including removal of rotting/aging flooring materials
- Rehabilitation of the main tavern room to serve as a visitor contact station
- Rehabilitation of the existing restrooms to comply with the Americans with Disabilities Act
- Rehabilitation of the kitchen and the space above the kitchen to serve as NPS staff space.
- Demolition and reconstruction of the existing enclosed porch to serve as NPS staff space
- All new mechanical, electrical, plumbing, and fire suppression systems for the tavern building, including a new waterline from the existing city main
- Installation of new interior windows, doors, and finishing of drywall, ceiling, and lighting
- Design, fabrication and installation of exhibits

In its new capacity as a visitor contact station, the renovated tavern would provide a safe and inviting environment for exhibits that depict the years the Lincoln family lived on the Knob Creek Farm. Visitors who are currently confused about and excluded from the historic Lincoln Tavern would now have access to the structure and be oriented to its local history as well as the Lincoln family story. Visitor and employee services would be improved with upgraded restrooms, potable water, and an Eastern National bookstore outlet. The existing, temporary visitor contact station would be removed from the site.

In addition to the foregoing work, this project would involve the development or improvement of visitor use facilities in other parts of the Boyhood Home Unit. Specific actions would include improvement and restoration of existing and former trails, especially the Overlook and the section of the Lincoln Memorial Trail located in the park, as well as installation of connecting walkways and a garden near the historic Lincoln Tavern. The Overlook Trail work would include tread restoration (water bars, etc.) for pedestrian use. Connecting trails in the vicinity of the tavern would be handicapped accessible.

All of the actions in this alternative would be guided by the prescriptions contained in the park's 2006 General Management Plan and the Historic Structure Report for the tavern.

Table 2.1: Comparison of the Elements of Each Alternative

Element	<u>Alternative A</u> No action / Continue Current Management	<u>Alternative B</u> Rehabilitate Historic Tavern and Upgrade Facilities at Boyhood Home Unit (Preferred Alternative)
Historic tavern	Ongoing inspections and general maintenance to ensure roof is intact, leaks are blocked, drainage problems are corrected, rodent and insect controls are in place, and damage from vandals is repaired.	Extensive restoration rehabilitation, and repair of the historic tavern, allowing it to be used as a visitor contact station for the Boyhood Home Unit
Parking area	Ongoing inspections and general maintenance to protect integrity of structure	Existing parking area replaced by a new, safer parking area in the existing grass island
Walkways	Same as above	Existing walkways augmented by new walkways connecting points of interest at the site
Hiking trails	Same as above	Existing trails restored and upgraded, with improvements to reduce environmental impacts (e.g., water bars, etc.)

2.4 Mitigation Measures

For all action alternatives, best management practices and mitigation measures would be used to prevent or minimize potential adverse effects associated with the project. These practices and measures would be incorporated into the project construction documents and plans.

Resource protection measures undertaken during project implementation would include, but would not be limited to, those listed in below in Table 2.2. The impact analyses in the “Affected Environment and Environmental Consequences” section were performed assuming that these best management practices and mitigation measures would be implemented as a part of all the action alternatives.

Table 2.2: Mitigation measures and Best Management Practices

Potential Adverse Effect on:	Mitigation Measure or Best Management Practice
Cultural Resources	<p>If not already accomplished, extant historic portions of the tavern that require reconstruction or restoration would be documented as called for in the <i>Secretary of the Interior’s Standards for the Treatment of Historic Properties</i> (NPS 1995b) prior to any disassembly.</p> <p>Documentary evidence from period plans, maps, and drawings and from the presence of existing structural elements would be used to provide for accurate reconstruction and rehabilitation of the structure. Wherever possible, the design, texture, color, materials, and scale of the original elements would be ascertained from existing information.</p> <p>Wherever feasible, historic elements such as bricks would be retained and reused. New materials (bricks and mortar) of the appropriate color, shape, size, texture, and appearance would be carefully selected to accurately replicate the form and character of the original structure.</p> <p>To minimize ground disturbance, all staging areas, materials stockpiling, vehicle storage, and other construction-related facilities and areas would be located in a previously disturbed area or on hardened surfaces such as the existing parking areas. Mortar would be mixed at the staging areas and transported to the part of the tavern under construction.</p> <p>Areas around the exterior of the historic Lincoln Tavern disturbed by restoration and rehabilitation would be revegetated with grass and landscape plantings and other landscape elements as appropriate. The types and locations of replacement vegetation would be carefully chosen to, where possible, replicate historic elements of the cultural landscape while avoiding introduction of problem exotic plants.</p> <p>Historical, architectural, and archeological records would be reviewed to determine the levels of previous disturbance in the area of potential effect (such as areas surrounding the foundations and back steps). Should areas of archeological potential be identified, further investigations would be conducted and appropriate mitigating measures would be developed prior to ground-disturbing activities.</p> <p>Potential ground-disturbing activities such as removal of existing walks would be carefully planned because these areas may harbor presently unknown archeological resources. Construction documents would include stop-work provisions should archeological resources be</p>

	<p>uncovered and the contractor would be apprised of these protective measures during the pre-construction conference.</p> <p>Work limits would be established and clearly marked to protect resources, and all protection measures would be clearly stated in the construction specifications. Workers would be instructed to avoid conducting activities beyond the construction zone and their compliance monitored by the project Contracting Officer's Technical Representative.</p> <p>Archeological monitoring of ground disturbance in currently inaccessible paved areas or areas beneath and adjacent to existing structures (walkways, steps, flooring, etc.) would help ensure that all cultural resources were identified and documented during the construction process.</p> <p>If previously unknown archeological resources were discovered, work would be stopped in the area of any discovery, protective measures would be implemented, and procedures outlined in <i>36 Code of Federal Regulations</i> 800 would be followed. Resources would be evaluated for their National Register of Historic Places significance, and adequate mitigation of project impacts (in consultation with appropriate agencies) and adjustment of the project design would take place to avoid or limit the adverse effects on resources.</p> <p>To reduce unauthorized collecting, construction personnel would be educated about cultural resources in general and the need to protect any cultural resources encountered. Work crews would be instructed regarding the illegality of collecting artifacts on federal lands to avoid any potential Archeological Resources Protection Act violations. This would include instructions for notifying appropriate personnel if human remains were discovered.</p>
Construction-related effects on soils	<p>Standard best management practices to limit erosion and control sediment release would be employed. Such measures include use of silt fencing, limiting the area of vegetative disturbance, use of erosion mats, and covering banked soils to protect them until they are reused.</p>
Public Health and Safety	<p>An accident prevention program would be a required submittal. This plan would include job hazard analyses associated with each major phase of the proposed project and would emphasize both worker and public safety. It would include planning for emergency situations, including fires, tornados, building collapse, explosions, power outages, and rainstorms.</p> <p>The plan would also take into consideration the nature of the construction, site conditions, including seasonal weather conditions and</p>

	<p>the degree of risk or exposure associated with the proposed activity. Regular project inspections and safety meetings would ensure the safety of the premises both to construction staff and visitors.</p> <p>A defined work area perimeter would be maintained to keep all construction-related impacts within the affected area. All paved areas that are subject to vehicular and pedestrian traffic would be kept clean of construction debris and soils. Sweeping of these areas would be implemented as necessary.</p> <p>Visitor safety would be ensured both day and night by fencing of the construction limits of the proposed action. Areas not safe for public entry would be marked and signed for avoidance. Unsafe conditions would be inspected for and corrected as soon as practicable to minimize the potential for staff or visitor injury.</p> <p>To the degree possible, impacts would be mitigated by the use of best management practices to reduce generation of dust and by limits on the types of chemicals (e.g., ones with high VOC ratings) used in new construction and the rehabilitation.</p>
<p>Visitor Experience</p>	<p>Specific provisions would ensure that the majority of material deliveries were made during the week, rather than on weekends or holidays. By the same token, most of the disruptive work would not occur on weekends or holidays. Disruptive early morning or late evening deliveries would be minimized to the extent possible. The contractor will be encouraged to deliver the majority of materials in the early morning hours, before 10:00 a.m.</p> <p>All construction equipment would be equipped with mufflers kept in proper operating conditions, and when possible, equipment would be shut-off rather than allowed to idle. Standard noise abatement measures would include the following elements: a schedule that minimizes impacts to adjacent noise-sensitive areas, use of the best available noise control techniques wherever feasible, use of hydraulically or electrically powered impact tools when feasible, and location of stationary noise sources as far from sensitive public use areas as possible.</p>
<p>Sustainability and Conservation Potential</p>	<p>Shipment of materials in full loads would be encouraged, and vehicles and equipment would be maintained to minimize pollution generation.</p> <p>Restoration and rehabilitation of the historic Lincoln Tavern would incorporate energy efficient and sustainable design to minimize energy consumption.</p>

2.5 Environmentally Preferred Alternative

The NPS Handbook for implementing Director's Order #12 (*Conservation Planning, Environmental Impact Analysis, and Decision Making*) requires that EAs identify the environmentally preferred alternative. Simply put, "this means the alternative that causes the least damage to the biological and physical environment; it also means the alternative which best protects, preserves, and enhances historic, cultural, and natural resources." (Q6a) (516 DM 6 4.10(A)(5)).

The Council on Environmental Quality (CEQ) regulations and National Park Service Policy state that environmental assessments prepared pursuant to NEPA must include a section stating how each alternative analyzed in detail would or would not achieve the requirements of NEPA sections 101 and 102(1) and other environmental laws and policies. 40 CFR 1502.2(d). This requirement is met within the National Park Service by (a) describing how each alternative meets the criteria set forth in NEPA section 101(b), and (b) identifying any conflicts between the alternatives analyzed in detail and other environmental laws and policies.

Section 101(b) of the National Environmental Policy Act identifies six criteria for assessing whether a proposed federal action complies with the national environmental policy as set forth in the act. Specifically, the act directs that a proposed federal action should:

- Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations.
- Ensure for all Americans safe, healthful, productive, and esthetically and culturally pleasing surroundings.
- Attain the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences.
- Preserve important historic, cultural and natural aspects of our national heritage and maintain, wherever possible, an environment that supports diversity and variety of individual choice.
- Achieve a balance between population and resource use that will permit high standards of living and a wide sharing of life's amenities
- Enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

In the National Park Service, the No Action alternative may also be considered in identifying the environmentally preferred alternative. However, in the present instance, continuing current management of the historic Lincoln Tavern and environs would be the least effective course in meeting the above criteria. Without further rehabilitation and repair, there is a strong potential for the tavern to suffer further deterioration from water, rodents and insects. Long-term closure of the tavern would limit public use and understanding of the Boyhood Home Unit, while public safety could be somewhat compromised by the design of the current parking facility.

Alternative B fully addresses the park’s need to enhance public health and safety and safeguard vital historic resources. Rehabilitating and restoring the historic Lincoln Tavern and providing fire detection and suppression systems in the building would improve the park’s ability to meet its mandate to preserve these resources. Similarly, upgrading the current parking facility to incorporate modern design features and accommodate additional vehicles would enhance public safety. Finally, installing new walkways and improving hiking trails would enhance the visitor circulation and opportunities for enjoyment in this unit of the park. For all of the foregoing reasons, Alternative B (preferred alternative) is the environmentally preferable alternative. The scoring for the individual alternatives is set forth in Table 2.3 below.

TABLE 2.3: ENVIRONMENTALLY PREFERABLE ALTERNATIVE ANALYSIS

Criteria	Alt. A	Alt. B
1. Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations.	2	5
2. Ensure safe, healthful, productive, and aesthetically and culturally pleasing surroundings for all Americans.	1	5
3. Attain the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences.	2	5
4. Preserve important historic, cultural, and natural aspects of our national heritage and maintain, wherever possible, an environment that supports diversity and a variety of individual choices.	2	5
5. Achieve a balance between population and resource use that will permit high standards of living and a wide sharing of life’s amenities.	2	5
6. Enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.	2	5
Total Points*	11	30

* Five points were given to the alternative if it fully meets the criteria; four points if it meets nearly all of the elements of the criteria; three points if it meets more than one element of the criteria; two points if it meets only one element of the criteria; and one point if the alternative does not meet the criteria.

2.6 How the Alternatives Meet the Objectives of the Proposed Action

Table 2.4 provides a comparative summary of alternatives and whether each alternative would meet the project objectives. As shown on the table, the action alternative would successfully meet all of the objectives of this project. The alternative of no action/continue current management would not meet any of the project objectives.

Table 2.4: Ability of the Alternatives to Meet Project Objectives

Objectives	Alternative A No Action/Continue Current Management	Alternative B Rehabilitate Historic tavern and Upgrade Facilities at Boyhood Home Unit (Preferred Alternative)
Protect cultural resources by preventing loss of these resources and by maintaining and improving the condition of the resources.	No	Yes
Improve visitor use, enjoyment, and understanding of the park	No	Yes
Protect public, health, safety, and welfare.	No	Yes
Improve the efficiency of park operations.	No	Yes
Provide additional opportunities for visitor use and enjoyment of the more remote portions of the park.	No	Yes

2.7 Alternatives Considered but Dismissed

The park conducted a value analysis effort that focused on three pre-design (conceptual) alternatives for restoring and rehabilitating the historic Lincoln Tavern. These conceptual alternatives had been previously developed as a result of a workshop held January 20-21, 2009. The concept behind each alternative can be described as follows:

- Alternative 1: Full use of both the first and second floor.
- Alternative 2: Full use of first floor; partial use of second floor.
- Alternative 3: Full use of first floor; no use of second floor.

The value analysis study team further developed these three suitable conceptual alternatives and then subjected them to full analysis using the Choosing by Advantages

(CBA) process. During the CBA process, the most expensive alternative (Alternative 1 above) was eliminated and one additional alternative was developed. This new alternative, Alternative 4, called for full use of the first floor, partial use of the second floor, and enclosure of the porch. This new alternative exploited advantages from alternatives 2 and 3 and was found to provide the greatest overall advantage to the NPS. Alternative 4 was found to be higher in benefits and lower in initial and life cycle cost than either Alternative 2 or Alternative 3. Alternative 4 thus became the basis of the preferred alternative (Alternative B) in this environmental assessment.

2.8 Summary of Impacts

Table 2.5 briefly summarizes the effects of each of the alternatives on the impact topics that were retained for analysis. More detailed information on the effects of the alternatives is provided in the “Affected Environment and Environmental Consequences” section.

Table 2.5: Summary of Environmental Impacts

Impact Topic	<u>Alternative A</u> No Action/Continue Current Management	<u>Alternative B</u> Rehabilitate the Historic Lincoln Tavern and Upgrade Facilities at Boyhood Home Unit (Preferred Alternative)
Historic structures	The historic Lincoln Tavern would deteriorate at a faster rate than if restored and rehabilitated. Impacts to the historic structure would be long-term, direct, moderate to major, and adverse. Cumulative impacts would be long-term, direct, minor, and adverse.	Alternative B would restore the exterior fabric of the tavern structure and rehabilitate and restore its first floor for use as a visitor contact station. Impacts to the historic structure would be long-term, direct, and beneficial. Cumulative impacts would likewise be long-term, direct and beneficial.
Cultural landscapes	Continuing current management would leave the historic Lincoln Tavern in a deteriorated condition and require the NPS to retain the current, non-historic visitor contact station in its present location in the cultural landscape. Impacts to cultural landscapes would be long-term, direct, minor to moderate and adverse. Overall cumulative impacts would be long-term, direct, minor, and adverse.	Alternative B would restore and rehabilitate the exterior fabric of the historic Lincoln tavern and would also allow removal of the existing, non-historic visitor contact station. Some new non-historic elements (e.g., new site walkways) would be constructed for safety and accessibility. On balance, impacts to cultural landscapes would be long-term, direct, and beneficial. Overall

		cumulative impacts would likewise be long-term, direct, and beneficial.
Soils	Some negligible impacts to soils would continue as a result of ongoing, background levels of erosion from existing dirt roads and trails. Impacts would be long-term, direct, negligible to minor, and adverse. Cumulative impacts would be long-term, direct, negligible, and adverse.	Alternative B would generate new soil disturbance over localized areas and cause the loss of soil functions in the existing grass island. However, erosion levels would be small due to the use of best management practices. Impacts to soils would likely be short- and long-term, direct, minor to moderate, and adverse. Cumulative impacts would be long-term, direct, negligible, and adverse.
Vegetation	No new impacts to vegetation would occur because no new land disturbing activities would be undertaken. Some ongoing impacts to vegetation would continue as a result of small levels of trampling by people visiting the tavern area and nearby fields. Impacts would be long-term, direct, negligible to minor, and adverse. Cumulative impacts would be long-term, direct, negligible, and adverse.	Alternative B would result in the loss of vegetation (mostly grasses and understory vegetation) in localized areas. Impacts to vegetation would be short- and long-term, direct, minor, and adverse. Cumulative impacts would be long-term, direct, negligible, and adverse.
Public health and safety	Continuing current management would protect public health and safety in the area of the historic Lincoln Tavern, but would do so by relying on short-term measures rather than permanent rehabilitation and repairs. Some safety issues would remain for mobility-impaired visitors and visitors hiking the forested parts of the Boyhood Home Unit. Impacts to public health and safety would be long-term, direct, minor, and adverse. Cumulative impacts would be long-term, direct, minor, and adverse.	Restoration and rehabilitation of the Historic Tavern would allow the structure to be safely re-opened for public use. Alternative B would address safety issues related to use of the Boyhood Home Unit by mobility-impaired visitors and visitors hiking the unit's forested areas. Direct and cumulative impacts to public health and safety would be long-term and beneficial.
Visitor use and	Continued closure of the historic	Opening the historic Lincoln

<p>experience, including accessibility for individuals with disabilities</p>	<p>Lincoln Tavern and failure to upgrade trails and other site facilities would limit visitor opportunities to experience and learn from the Boyhood Home Unit. Impacts to visitor use and experience would be long-term, direct, moderate, and adverse. Cumulative impacts would be long-term, direct, moderate, and adverse.</p>	<p>Tavern and upgrading trails and other site facilities would dramatically improve visitor opportunities to experience and learn from the Boyhood Home Unit. Impacts to visitor use and experience would be long-term, direct, and beneficial. Cumulative impacts would be long-term, direct, and beneficial.</p>
<p>Park operations and management</p>	<p>Ongoing repair and maintenance of the tavern would create long-term, direct, adverse effects on park operations of moderate intensity as the escalating deterioration diverted staff from other necessary park tasks.</p>	<p>Park operations would experience long-term, direct, benefits as the repair burden was reduced. Emergency repair activities would be replaced by lower-intensity regular maintenance, and staff could focus their attention on other resource and park management matters.</p>

3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

3.1 Introduction

The National Environmental Policy Act requires that before any federal agency undertakes a major action, it must discuss the environmental impacts of that action, feasible alternatives to that action, and any adverse environmental effects that cannot be avoided if the proposed action is implemented. Accordingly, this section describes the environmental consequences associated with the alternatives described in Section 2 above. It is organized by impact topics, which allow a standardized comparison between alternatives based on issues. Consistent with NEPA, the analysis also considers the context, intensity, and duration of impacts, indirect impacts, cumulative impacts, and measures to mitigate impacts. National Park Service policy also requires that the potential for “impairment” of resources be evaluated in all environmental documents.

The first part of this section discusses the methodology used to identify impacts and includes definitions of terms. The impact topics are then analyzed with reference to each of the three alternatives. The discussion of each impact topic includes a description of the affected environment for that topic, an analysis of the positive and negative effects of each alternative, a discussion of cumulative effects, if any, and a conclusion.

3.2 Methodology

Generally, the methodology for resource impact assessments follows direction provided in the Council on Environmental Quality (CEQ) Regulations for Implementing the National Environmental Policy Act, Parts 1502 and 1508. The impact analysis and the conclusions in this part are based largely on the review of existing literature and park studies, information provided by experts within the National Park Service and other agencies, park staff insights and professional judgment.

The impacts from the three alternatives were evaluated in terms of the context, duration, and intensity of the impacts, as defined below, and whether the impacts were considered beneficial or adverse to park resources and values.

3.2.1 Context

Each impact topic addresses effects on resources inside and outside the park, to the extent those effects are traceable to the actions set forth in the alternatives.

3.2.2 Duration

Short term Impacts – Those that would occur within one year of construction.

Long-term Impacts – Those that would continue to exist after completion of construction.

3.2.3 Impact Intensity

Intensity definitions for the impact topics analyzed in this document are set forth in the following table:

TABLE 3.1: IMPACT INTENSITY DEFINITIONS

Impact Topic	Negligible	Minor	Moderate	Major
CULTURAL RESOURCES				
Historic Structures	The impact would be at the lowest level of detection or barely perceptible and not measurable. For purposes of section 106, the determination of effect would be <i>no adverse effect</i> .	The impact would not affect the character defining features of a structure or building listed on or eligible for the National Register of Historic Places. For purposes of section 106, the determination of effect would be <i>no adverse effect</i> .	The impact would alter a character defining feature(s) of the structure or building but would not diminish the integrity of the resource to the extent that its national register eligibility would be jeopardized. For purposes of section 106, the determination of effect would be <i>no adverse effect</i> .	The impact would alter a character defining feature(s) of the structure or building, diminishing the integrity of the resource to the extent that it is no longer eligible to be listed on the national register. For purposes of section 106, the determination of effect would be <i>adverse effect</i> .
Cultural Landscapes	The impact is at the lowest levels of detection or barely perceptible and not measurable. For purposes of section 106, the determination of effect would	The impact would not affect the character-defining features of a cultural landscape listed on or eligible for the National Register of	The impact would alter a character defining feature or features of the cultural landscape but would not diminish the integrity of the landscape to the	The impact would alter a character-defining feature(s) of the cultural landscape, diminishing the integrity of the resource to the extent that it

Impact Topic	Negligible	Minor	Moderate	Major
	be <i>no adverse effect</i> .	Historic Places. For purposes of section 106, the determination of effect would be <i>no adverse effect</i> .	extent that its national register eligibility would be jeopardized. For purposes of section 106, the determination of effect would be <i>no adverse effect</i> .	would no longer be eligible to be listed on the national register. For purposes of section 106, the determination of effect would be <i>adverse effect</i> .
NATURAL RESOURCES				
Soils	The action would result in a change in soils but the change would be at the lowest level of detection, or not measurable.	The action would result in a detectable change, but the change would be slight and local. Soils might be slightly altered in a way that would be noticeable. There could be changes in a soil's profile in a relatively small area, but the change would not appreciably increase the potential for erosion.	The action would result in a clearly detectable change in soils—soils would be obviously altered, or a few features would show changes. There could be a loss or alteration of the topsoil in a small area, or the potential for erosion to remove small quantities of additional soil would increase.	The action would result in the permanent loss of an important soil or there would be highly noticeable, widespread changes in many soils. There would be a permanent loss or alteration of soils in a relatively large area, or there would be a strong likelihood for erosion to remove large quantities of additional soil as a result of the action.

Impact Topic	Negligible	Minor	Moderate	Major
Vegetation	The action might result in a change in vegetation, but the change would not be measurable or would be at the lowest level of detection.	The action might result in a detectable change, but the change would be slight. This could include changes in the abundance, distribution, or composition of individual species in a local area, but would not include changes that would affect the viability of vegetation communities. Changes to local ecological processes would be minimal.	The action would result in a clearly detectable change in a vegetation community and could have an appreciable effect. This could include changes in the abundance, distribution, or composition of nearby vegetation communities, but would not include changes that would affect the viability of plant populations in the park. Changes to local ecological processes would be of limited extent.	The action would be severely adverse to a vegetation community. The impacts would be substantial and highly noticeable, and they could result in widespread change. This could include changes in the abundance, distribution, or composition of a nearby vegetation community or plant populations in the park to the extent that the population would not be likely to recover. Key ecological processes would be altered, and “landscape-level” (regional) changes would be expected.
VISITOR USE AND EXPERIENCE				
Public Health and Safety	Public health and safety would not be affected, or the effects would be at low levels of detection and would not	The effect would be detectable, but would not have an appreciable effect on public health and safety.	The effect would be readily apparent, and would result in substantial, noticeable effects on	The effects would be readily apparent, and would result in substantial, noticeable effects on public health safety on a

Impact Topic	Negligible	Minor	Moderate	Major
	have an appreciable effect on the public health or safety.		public health and safety on a local scale. Changes in rates or severity of injury could be measured.	regional scale. Changes could lead to changes in mortality.
Visitor Use and Experience (including accessibility for individuals with disabilities)	Visitors would likely be unaware of any effects associated with implementation of the alternative. There would be no noticeable changes in visitor use and/or experience or in any defined indicators of visitor satisfaction or behavior.	Changes in visitor use and/or experience would be slight but detectable, but would not appreciably diminish or enhance critical characteristics of the visitor experience. Visitor satisfaction would remain stable.	Few critical characteristics of the desired visitor experience would change and/or the number of participants engaging in an activity would be altered. The visitor would be aware of the effects associated with implementation of the alternative and would likely be able to express an opinion on the changes. Visitor satisfaction would begin to either decline or increase as a direct result of the effect.	Multiple critical characteristics of the desired visitor experience would change and/or the number of participants engaging in an activity would be greatly reduced or increased. The visitor would be aware of the effects associated with implementation of the alternative and would likely express a strong opinion about the change. Visitor satisfaction would markedly decline or increase.

Impact Topic	Negligible	Minor	Moderate	Major
PARK OPERATIONS AND MANAGEMENT				
Park Operations and Management	The effect would be at or below the level of detection, and would not have an appreciable effect on park operations and management.	The effects would be detectable, but would be of a magnitude that would not have an appreciable effect on park operations and management.	The effects would result in a change in park operations and management in a manner readily apparent to staff and possibly to the public.	The effects would result in a substantial and widespread change in park operations and management in a manner readily apparent to staff and the public.

3.2.4 Impact Type and Mitigation

Unless otherwise noted, impacts would be adverse.

CEQ regulations and the National Park Service’s *Conservation Planning, Environmental Impact Analysis and Decision-making* (Director’s Order #12) call for a discussion of the appropriateness of mitigation, as well as an analysis of how effective the mitigation would be in reducing the intensity of a potential impact, e.g. reducing the intensity of an impact from major to moderate or minor. The action alternative assumes that park managers would apply mitigation measures to minimize or avoid impacts (see Table 2.2 above). If appropriate mitigation measures were not applied, the potential for resource impacts would increase and the magnitude of those impacts would rise.

3.2.5 Direct versus Indirect Impacts

Direct effects would be caused by an action and would occur at the same time and place as the action. Indirect effects would be caused by the action and would be reasonably foreseeable but would occur later in time, at another place, or to another resource.

3.3 Specific Methodology for Assessing Effects on Cultural Resources

This EA includes an analysis of the effects that the two alternatives may have on relevant cultural resources at the Boyhood home Unit (i.e., on historic structures and cultural landscapes). The method for assessing effects on cultural resources is designed to comply with the requirements of both the National Environmental Policy Act (NEPA) and Section 106 of the National Historic Preservation Act (NHPA), and with implementing regulations 40 CFR 1500 and 36 CFR 800, respectively, while considering the differences between NEPA and NHPA language and recognizing that compliance with

one does not automatically mean compliance with the other. Accordingly, the assessment of effects discusses the following characteristics of effects:

- Direct and indirect effects
- Duration of the effect (short-term, long-term)
- Context of the effect (site-specific, local, regional)
- Intensity of the effect (negligible, minor, moderate, major, both adverse and beneficial)
- Cumulative nature of the effect

In accordance with 36 CFR 800, the regulations implementing Section 106 of NHPA, effects on cultural resources are identified and evaluated by:

- Determining the area of potential effect (APE) [36 CFR 800.4(a)]
- Identifying historic properties in the APE that are listed in or eligible for listing in the National Register of Historic Places [36 CFR 800.4(b)-(c)]. The results are either:
 - *No historic properties affected* – either there are no historic properties present or there are historic properties present but the undertaking will have no effect upon them [36 CFR 800.4(d)(1)]; or
 - *Historic properties affected* – there are historic properties that may be affected by the undertaking [36 CFR 800.4(d)(2)].
- Applying the criteria of adverse effect to affected historic properties in the area of APE [36 CFR 800.5.(a)(1)], as follows:
 - An *adverse effect* is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Consideration shall be given to all qualifying characteristics of a historic property, including those that may have been identified subsequent to the original evaluation of the property's eligibility for the National Register. Adverse effects may include reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance or be cumulative. [Examples of adverse effect are provided in 36 CFR 800.5(a)(2).]

- A finding of *no adverse effect* is found when the undertaking's effects do not meet the criteria of 800.5(a)(1) [36 CFR 800.5.(b)].
- Considering ways to avoid, minimize, or mitigate or otherwise resolve adverse effects. The following are considered:
 - Consultation with the SHPO/THPO and others to develop and evaluate strategies to mitigate adverse effects [36 CFR 800.6].
 - CEQ regulations and Director's Order 12 call for the discussion of mitigating impacts and an analysis of how effective the mitigation would be in reducing the intensity of an impact, such as reducing it from moderate to minor intensity. Any resultant reduction in impact intensity is, however, an estimate of the effectiveness of mitigation under NEPA only.
 - Such reduction in impact intensity does not suggest that the level of effect as defined by Section 106 and 36 CFR 800 is similarly reduced. Cultural resources are non-renewable resources and adverse effects generally consume, diminish, or destroy the original historic materials or form, resulting in a loss of integrity that can never be recovered. Therefore, although actions determined to have an adverse effect under Section 106 and 36 CFR 800 may be mitigated, the effect remains adverse.

A Section 106 Summary is included in the impact analysis sections. The Section 106 summary provides an assessment of effect of the undertaking (implementation of the alternative), on historic properties, based on the Section 106 regulations cited above.

Definitions of impact intensity with respect to historic structures and cultural landscapes are provided in Table 3.1 above.

3.4 Cumulative Impacts

Regulations implementing NEPA issued by the CEQ require the assessment of cumulative impacts in the decision-making process for federal actions. Cumulative impacts are defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions" (40 CFR 1508.7). Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

The cumulative impacts analyzed in this document consider the incremental effects of the three alternatives in conjunction with past, current, and future actions at the park. Cumulative impacts were determined by combining the effects of a given alternative with other past, present, and reasonably foreseeable future actions. The impact analysis and

conclusions are based on information available in the literature, data from National Park Service studies and records, and information provided by experts within the National Park Service and other agencies. Unless otherwise stated, all impacts are assumed to be direct and long-term.

To assess cumulative impacts, it was necessary to identify other past, ongoing, or reasonably foreseeable future actions at and around Abraham Lincoln National Historical Park. Past and ongoing actions include, but are not limited to:

- The original construction of the historic Lincoln Tavern, and its ongoing restoration and maintenance;
- Future interpretation and education programs at the park;
- Continuing loss of historic structures in the area;

Reasonably foreseeable projects and plans in the immediate vicinity of the historic Lincoln Tavern were identified previously under “Other Projects and Plans” in the “Purpose and Need” section. Other reasonably foreseeable projects and plans include the continuing development of the Hodgenville, Kentucky area and the region.

3.5 NPS Management Policies 2006, Section 1.4: The Prohibition on Impairment of Park Resources and Values

By enacting the NPS Organic Act of 1916 (Organic Act), Congress directed the U.S. Department of Interior and the NPS to manage units “to conserve the scenery and the natural and historic objects and wildlife therein and to provide for the enjoyment of the same in such a manner and by such a means as will leave them unimpaired for the enjoyment of future generations” (16 USC § 1). Congress reiterated this mandate in the Redwood National Park Expansion Act of 1978 by stating that NPS must conduct its actions in a manner that will ensure no “derogation of the values and purposes for which these various areas have been established, except as may have been or shall be directly and specifically provided by Congress” (16 USC 1a-1).

NPS Management Policies 2006, Section 1.4.4, explains the prohibition on impairment of park resources and values:

While Congress has given the Service the management discretion to allow impacts within parks, that discretion is limited by the statutory requirement (generally enforceable by the federal courts) that the Park Service must leave park resources and values unimpaired unless a particular law directly and specifically provides otherwise. This, the cornerstone of the Organic Act, establishes the primary responsibility of the Nation Park Service. It ensures that park resources and values will continue to exist in a condition that will allow the American people to have present and future opportunities for enjoyment of them.

The NPS has discretion to allow impacts on Park resources and values when necessary and appropriate to fulfill the purposes of a Park (NPS 2006c sec. 1.4.3). However, the

NPS cannot allow an adverse impact that would constitute impairment of the affected resources and values (NPS 2006c sec 1.4.3). An action constitutes an impairment when its impacts “harm the integrity of Park resources or values, including the opportunities that otherwise would be present for the enjoyment of those resources or values” (NPS 2006c sec 1.4.5). To determine impairment, the NPS must evaluate “the particular resources and values that would be affected; the severity, duration, and timing of the impact; the direct and indirect effects of the impact; and the cumulative effects of the impact in question and other impacts” (NPS 2006c sec 1.4.5). A determination on impairment for the preferred alternative evaluated in this plan/EA is provided in Appendix B.

3.6 Topics Dismissed from Further Analysis

The topics dismissed from further analysis, and the reasons therefore, are discussed in section 1.5.4 above.

3.7 Analysis of Individual Impact Topics

For each impact topic analyzed below, the analysis includes a brief description of the affected environment and an evaluation of the effects of implementing each alternative. Developing the impact analyses has involved the following steps:

Define issues of concern, based on internal and external scoping.

Identify the geographic area that could be affected.

Define the resources within that area that could be affected.

Impose the action on the resources within the area of potential effect.

Identify the effects caused by the alternative, in comparison to the baseline represented by the No Action Alternative, to determine the relative change in resource conditions.

Characterize the effects based on the following factors:

- Whether the effect would be beneficial or adverse.
- The intensity of the effect, either negligible, minor, moderate, or major. Impact-topic-specific thresholds for each of these classifications are provided in Table 3.1. Threshold values were developed based on federal and state standards, consultation with regulators from applicable agencies, and discussions with subject matter experts.
- Duration of the effect, either short-term or long-term, as well as the area affected by the alternative.
- Whether the effect would be a direct result of the action or would occur indirectly because of a change to another resource or impact topic. An example

of an indirect impact would be increased structural deterioration that would occur due to opening the house to visitation without appropriate safeguards.

Determine whether impairment would occur to resources and values that are considered necessary and appropriate to fulfill the purposes of Abraham Lincoln National Historical Park.

Determine cumulative effects by evaluating the effect in conjunction with the past, current, or foreseeable future actions for Abraham Lincoln National Historical Park and the region.

3.7.1 HISTORIC STRUCTURES

3.7.1.1 Background

Abraham Lincoln Birthplace National Historical Park is recognized primarily as a cultural resource park with significant natural resources. This site provides a direct link to the birth and early years of America's 16th president.

The two Lincoln farms are in the Pennyroyal region of west central Kentucky. The area is characterized as rolling upland plain having a hilly countryside with stream beds, sinkholes, and limestone and sandstone outcroppings. People have occupied the Pennyroyal region since at least 11,000 BC. These early Paleo-Indian inhabitants were hunters of Pleistocene megafauna. Occupation of the region by prehistoric humans continued through the Mississippian period, ca. 1000 to 1650 AD, which is characterized as a maize agriculture-based society. The barrens, a large area of land burned off by native people to attract buffalo, was adjacent to the Birthplace Unit.

European settlers first entered the area in 1788. Not long afterwards they established two mills on the Nolin River and South Fork Creek. These became the center for permanent settlements in the area. Thomas Lincoln bought the Sinking Spring Farm in 1808. The Lincolns lived on this farm for two years after Abraham Lincoln was born in 1809. The land bought by Thomas Lincoln might have been partially cleared for farming, since there had been prior owners. If not, it probably was partially cleared by Thomas Lincoln. The same was true of the farm at Knob Creek. Over the years various crops were raised at both farms.

3.7.1.2 Affected Resources

The Boyhood Home Unit contains a National Register of Historic Places Historic District that is significant for its local history. The district consists of the historic Lincoln Tavern, a replica of the Lincoln boyhood home, and a small area around these structures. The district is significant for its role in the history of LaRue County tourism and its place in Abraham Lincoln iconography. The Lincoln Tavern is a 1 ½ story log and concrete, asymmetrical building with an exterior constructed from unhewn logs with saddle and V-

notching and concrete chinking. The west facade features a prominent limestone block chimney, and at the rear is a 1-story addition. The tavern was built in 1933 and served for many years as a local tourist attraction and entertainment center. About the same time the tavern was constructed, the replica of the Lincoln Boyhood Home was constructed. This rectangular single-pen log building consists of hewn logs with mud and rock slat chinking and a prominent log and mud chimney.

3.7.1.3 Environmental Consequences

ALTERNATIVE A (No Action/Continue Current Management)

Analysis. Under Alternative A, the National Park Service would maintain the historic Lincoln Tavern as a stabilized shell. The building would deteriorate at a faster rate than if restored and rehabilitated because it would not be occupied or otherwise used, and would be subject to less frequent maintenance and repair than if open to visitors. The current emergency stabilization measures would be maintained, but long-term structural repairs would not be implemented. Impacts to the historic structure would be long-term, direct and indirect, moderate to major, and adverse.

Cumulative Effects. Continuing current management would add to the ongoing deterioration and even loss of historic structures in the local area and region at large. It would also impact interpretive programs at the park by continuing to limit opportunities for interpreting the story of LaRue County tourism and Lincoln iconography. Cumulative impacts would be long-term, direct, minor, and adverse.

Conclusion. Continuing current management would have impacts to the historic structure that were long-term, direct, moderate to major, and adverse. Cumulative impacts would be long-term, direct, minor, and adverse.

Section 106 Summary. After applying the Advisory Council on Historic Preservation's criteria of adverse effects (36 CFR part 800.5, *Assessment of Adverse Effects*), the National Park Service concludes that implementation of Alternative A **would have an adverse effect** on the historic Lincoln Tavern. Should Alternative A become the selected approach for managing the monument, the National Park Service will negotiate a Memorandum of Agreement with the Georgia State Historic Preservation Officer to address this adverse effect, with appropriate mitigation measures.

ALTERNATIVE B (Rehabilitate the Historic Lincoln Tavern and Upgrade Facilities at Boyhood Home Unit) (Preferred Alternative):

Analysis. Alternative B would enhance and protect the resource value of the historic Lincoln Tavern by restoring the exterior fabric of the structure and by rehabilitating and restoring the building's first floor for use as a visitor contact station. The proposed work would also correct structural deficiencies, thereby allowing the long-term preservation of this important National Register property. A fire detection/suppression system and a

security system would be installed to forestall loss or damage to the building from fire or vandalism. These actions would help protect this important cultural resource by restoring the integrity and character of the structure, improving its general condition, effecting preservation as guided by National Park Service standards, protecting it from casualty, and retarding further deterioration from wind, water, rodents, and insects. All work performed on the structure would be done in such a way as to minimize impacts on, and allow preservation of, the remaining historic fabric. Impacts to the historic structure would be long-term, direct, and beneficial.

Cumulative Effects. Alternative B would partially offset past deterioration and destruction of the structure and increase the stock of well-maintained historic structures in the local area and region. Cumulative impacts would be long-term, direct, and beneficial.

Conclusion. Restoration and rehabilitation activities would have impacts to the historic structure that were long-term, direct, and beneficial. Cumulative impacts would likewise be long-term, direct and beneficial.

Section 106 Summary

After applying the Advisory Council on Historic Preservation's criteria of adverse effects (36 CFR Part 800.5, *Assessment of Adverse Effects*), the National Park Service concludes that implementation of the preferred alternative (Alternative B – Rehabilitate the Historic Lincoln Tavern and Upgrade Facilities at Boyhood Home Unit) would have no adverse effect on historic structures at the Boyhood Home Unit of Abraham Lincoln National Historical Park.

This environmental assessment includes mitigation measures that would help reduce potential adverse effects on cultural resources, and all work would be performed in compliance with the *Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation* (NPS 1995a). For example, construction activities would be carefully planned to avoid damage to historic fabric. Work around the periphery of the structure and in the yard would be monitored by an archeologist meeting the Secretary of the Interior's standards.

Wherever feasible, historic elements would be retained and reused. New materials of the appropriate color, shape, size, texture, and appearance would be carefully selected to accurately replicate the form and character of the original structure.

Documentary evidence from period plans, maps, and drawings and from the presence of existing structural elements would be used to provide for accurate reconstruction and rehabilitation of the structure. Wherever possible, the design, texture, color, materials, and scale of the original elements would be ascertained from existing information. Prior to initiation of any reconstruction activities, these elements would be carefully documented as described in the *Secretary of the Interior's Standards for the Treatment of Historic Properties* (NPS 1995b).

To avoid any unauthorized collecting from areas where construction is proposed, work crews would be educated about cultural resources in general and the need to protect any cultural resources encountered. Work crews would be instructed regarding the illegality of collecting artifacts on federal lands to avoid any potential violations. In the unlikely event that previously unknown cultural resources were discovered during construction, work would be halted in the vicinity of the resource, and procedures outlined in 36 *Code of Federal Regulations* 800 would be followed.

The Kentucky State Historic Preservation Office (SHPO) has been involved in this project from the beginning. The SHPO has previously determined that the work described in Alternative B would have no adverse effect on the historic Lincoln Tavern. See letter from Kentucky SHPO dated November 24, 2009, reproduced in Appendix A. However, the SHPO will be provided a copy of this EA and any comments the SHPO may have on the project will be addressed in the final compliance documents. Should the need arise, additional mitigation measures also would be developed in consultation with the SHPO.

3.7.2 CULTURAL LANDSCAPES

3.7.2.1 Affected Resources

Historic cultural landscapes represent a complex subset of cultural resources resulting from the interaction between people and the land. Cultural landscapes are shaped through time by historical land-use and management practices, politics, war, property laws, levels of technology, and economic conditions. Cultural landscapes are a living record of an area's past, providing a visual chronicle of its history. The dynamic nature of human life contributes to the continual reshaping of cultural landscapes. This makes them a good source of information about specific times and places, but renders their long-term preservation a challenge.

A cultural landscape by definition occupies a geographic area that incorporates natural and cultural elements that are associated with a historic activity, event, or person. The National Park Service recognizes four categories:

- historic designed landscapes (i.e., incorporates a deliberate human element to the modification and use of a particular piece of land),
- historic vernacular landscapes (reflects on values and attitudes about land over time),
- historic sites (sites significant for their association with important events, activities, and people; at these areas, existing features and conditions are defined and interpreted primarily in terms of what happened there at particular times in the past), and
- ethnographic landscapes (landscapes associated with contemporary groups that use the land in a traditional manner).

The character-defining features of a cultural landscape include spatial organization and land patterns; topography; vegetation; circulation patterns; water features; and structures or buildings, site furnishings, and objects (*Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes, 1996*).

No cultural landscape report has been done for the Boyhood Home Unit. However, the historic Lincoln Tavern appears to fall within two of the above-listed categories of cultural landscapes, namely, (1) historic sites, and (2) historic designed landscapes. As noted previously, the tavern is listed on the National Register of Historic Places. The structure has been listed because of its role in the history of LaRue County tourism and its place in Abraham Lincoln iconography. Furthermore, the tavern building is located within a historic designed landscape. This landscape includes the parking area and associated walkways designed to facilitate visitation of the tavern. It also includes the replica cabin situated a short distance from the tavern and parking area. Accordingly, for purposes of this EA, it will be assumed that the tavern and surrounding area constitute a cultural landscape.

The cultural landscape of the Boyhood Home Unit is relatively intact. The principal non-historic intrusion is the temporary visitor contact station located between the tavern and the replica cabin. This structure was constructed soon after the Boyhood Home property was transferred to the National Park Service.

3.7.2.2 Environmental Consequences

ALTERNATIVE A (No Action/Continue Current Management)

Analysis. Under Alternative A, the National Park Service would maintain the historic tavern in its current condition. The tavern would maintain its place in the overall cultural landscape, but the deteriorated condition of the structure would differ from its historic appearance, with corresponding impacts to the cultural landscape that would be long-term, direct, minor, and adverse. In addition, continuing current management would entail long-term use of the temporary visitor contact station. Retaining this non-historic structure for long-term use would have impacts to the cultural landscape that are long-term, direct, moderate, and adverse.

Cumulative Effects. Continuing current management would add to the ongoing deterioration and even loss of cultural landscapes in the local area and region at large. Cumulative impacts would be long-term, direct, minor, and adverse.

Conclusion. Continuing current management would leave the historic Lincoln Tavern in a deteriorated condition and require the NPS to retain the current, non-historic visitor contact station in its present location in the cultural landscape. Impacts to cultural landscapes would be long-term, direct, minor to moderate and adverse. Overall cumulative impacts would be long-term, direct, minor, and adverse.

Section 106 Summary. After applying the Advisory Council on Historic Preservation’s criteria of adverse effects (36 CFR part 800.5, *Assessment of Adverse Effects*), the National Park Service concludes that implementation of Alternative A would have no adverse effect on cultural landscapes at the Boyhood Home Unit of Abraham Lincoln National Historical Park.

ALTERNATIVE B (Rehabilitate the Historic Lincoln Tavern and Upgrade Facilities at Boyhood Home Unit) (Preferred Alternative):

Analysis. Alternative B would enhance and protect the cultural landscape of the Boyhood Home Unit by restoring and rehabilitating the historic Lincoln Tavern, including its exterior fabric, which dominates views of the site. In addition, restoring the tavern building’s first floor for use as a visitor contact station would allow NPS to remove the existing temporary structure from the site, thereby removing a non-historic visual intrusion into the historic scene. Impacts to cultural landscapes from these actions would be long-term, direct, and beneficial. These beneficial impacts would be partially off-set by site enhancements for accessibility and public safety (e.g., new accessibility ramp at the tavern and new walkways between buildings). These modifications for safety and accessibility would result in impacts to cultural landscapes that were long-term, direct, minor to moderate, and adverse. New, detached comfort stations would also be constructed, but these would merely replace similar structures already in place. On balance, the impacts of Alternative B on the cultural landscapes would be direct, long-term, and beneficial.

Cumulative Effects. Alternative B would counterbalance somewhat the ongoing deterioration and even loss of cultural landscapes in the local area and region at large. Cumulative impacts would be long-term, direct, and beneficial.

Conclusion. Alternative B would restore and rehabilitate the exterior fabric of the historic Lincoln tavern and would also allow removal of the existing, non-historic visitor contact station. Some new non-historic elements (e.g., new site walkways) would be constructed for safety and accessibility. On balance, impacts to cultural landscapes would be long-term, direct, and beneficial. Overall cumulative impacts would likewise be long-term, direct, and beneficial.

Section 106 Summary

After applying the Advisory Council on Historic Preservation’s criteria of adverse effects (36 CFR Part 800.5, *Assessment of Adverse Effects*), the National Park Service concludes that implementation of the preferred alternative (Alternative B – Rehabilitate the Historic Lincoln Tavern and Upgrade Facilities at Boyhood Home Unit) would have no adverse effect on cultural landscapes at the Boyhood Home Unit of Abraham Lincoln National Historical Park.

3.7.3 SOILS

3.7.3.1 Affected Resources

Soils at the Boyhood Home Unit are composed of Sensabaugh silt loam, Garmon silt loams, Hagerstown silt loam, and Caneyville-Rock outcrop complex (see Table 3.2).

TABLE 3.2: SOILS AT BOYHOOD HOME UNIT

Name	Slope	Location	Restrictions
SENSABAUGH SILT LOAM	LEVEL	BOTTOMLANDS	SEVERE RESTRICTIONS FOR ALL CONSTRUCTION BECAUSE OF FLOODING.
GARMON SILT LOAMS	25 TO 60%	SIDE SLOPES	SEVERE FOR ALL CONSTRUCTION BECAUSE OF SLOPES
HAGERSTOWN SILT LOAM	2 TO 12%	TOP OF KNOBS	MODERATE FOR ALL CONSTRUCTION BECAUSE OF SLOPES, LOW STRENGTH AND SHALLOW DEPTH TO ROCK
CANEYVILLE-ROCK OUTCROP COMPLEX	6 TO 30%	TOP OF KNOBS	SEVERE FOR BUILDINGS AND MODERATE FOR ROADS BECAUSE OF LOW STRENGTH, HIGH SLOPES, ROCK

Source: Soil Conservation Service (1979)

Soils on the flatter surfaces of the Boyhood Home Unit have a long history of disturbance by human activities, including agriculture and various types of construction.

3.7.3.2 Environmental Consequences

ALTERNATIVE A (No Action/Continue Current Management)

Analysis. Under Alternative A, the National Park Service would maintain the Boyhood Home Unit essentially in its current state. No new soil disturbing activities would be undertaken. Consequently new impacts to soils would be negligible. Some impacts to soils would continue as a result of erosion from existing dirt roads and trails. Impacts would be long-term, direct, negligible to minor, and adverse.

Cumulative Effects. Continuing current management would add to the ongoing loss of soils at the local and regional level resulting from human land disturbing activities. The contribution of this alternative to such ongoing soil loss would be negligible since it calls for no new land disturbing activities and ongoing soil loss at the Boyhood Home unit is barely detectable. Cumulative impacts would thus be long-term, direct, negligible, and adverse.

Conclusion. Some negligible impacts to soils would continue as a result of ongoing, background levels of erosion from existing dirt roads and trails. Impacts would be long-term, direct, negligible to minor, and adverse. Cumulative impacts would be long-term, direct, negligible, and adverse.

ALTERNATIVE B (Rehabilitate the Historic Lincoln Tavern and Upgrade Facilities at Boyhood Home Unit) (Preferred Alternative):

Analysis. Alternative B would generate new soil disturbance due to construction of new walkways near the tavern, construction of a new parking area in the existing grass island, and improvement and restoration of existing and former trails, especially the Overlook and Lincoln Memorial trails. Except for the trail restoration and modification activities, soil disturbance would take place on flat ground and would result in minimal erosion, especially in light of the silt fences and other best management practices required by the “Mitigation Measures” portion of this EA (see Section 2.4 above). On the other hand, the soil functions in the existing grass island would be lost due to the paving of this area. As for the trail restoration and modification projects, soil erosion would increase during and after construction due to initial soil disturbance and subsequent compaction by hikers. However, the impacted areas would be small, and a substantial part of each of these projects would entail installation of water bars and other measures specifically designed to minimize erosion and increase long-term sustainability of the trails. On balance, impacts to soils are likely to be short- and long-term, direct, minor to moderate, and adverse.

Cumulative Effects. Alternative B would add to the ongoing loss of soils at the local and regional level resulting from human land disturbing activities. The contribution of this alternative to such ongoing soil loss would be negligible to minor since it calls for limited soil disturbance and best management practices would be employed to minimize soil erosion. Cumulative impacts would thus be long-term, direct, negligible, and adverse.

Conclusion. Alternative B would generate new soil disturbance over localized areas and cause the loss of soil functions in the existing grass island. However, erosion levels would be small due to the use of best management practices. Impacts to soils would likely be short- and long-term, direct, minor to moderate, and adverse. Cumulative impacts would be long-term, direct, negligible, and adverse.

3.7.4 VEGETATION

3.7.4.1 Affected Resources

Central Kentucky is in a transition zone between the southern hardwood forests and the northern plains. The Boyhood Home Unit is also in an ecotone, or transition zone, between the Mississippian Plateau and the Knobs Region of Kentucky. Because of this, there is an unusually diverse and abundant community of flora at this unit. The north-

eastern corner of the Birthplace Unit, covering about 9 acres, is an impressive old-growth oak forest.

Tree species in the region include red oak, white oak, wild apples, wild cherries, hazel, hickory, and black walnut. Shrubs of the mesophytic forests include spicebush, American bladdernut, eastern hop hornbeam, and pawpaw. Ground cover is composed of forbs such as sassafras, wild rose, mint, wild berries, wild lettuce, pokeweed, and milkweed, as well as various grasses. In addition, vines such as poison ivy and others root in the ground and climb up on other species.

The Boyhood Home Unit contains a variety of vegetation types including heavily vegetated slopes of red buckeye (*Aesculus pavia*) and chinquapin oak (*Quercus muehlenbergii*), mixed hardwood forest along ridgetops and Knob Creek, fields, hardwood glades, and a small area of regularly maintained lawn. The steep bluffs around Knob Creek exhibit more natural vegetation, and the lowlands have been farmed or landscaped. Some areas of vegetation on top of the south knob have been manipulated by past landowners to create habitat for game animals. Current boundaries at the Boyhood Home Unit include a portion of a rare limestone glade in the northeast corner. Glades occur on limestone outcroppings on south- or west-facing slopes. They are characterized by shallow rocky soils and a number of flowering prairie/glade plants that have adapted to the harsh, dry conditions. The glade extends onto adjacent private land. Most of the native forest in the unit has been cut down in the past to provide wood for construction or fuel, or to clear land for agriculture. In addition to other trees, settlers used wood from the American chestnut for their buildings. This use, combined with a chestnut blight that affected the eastern U.S. in the first half of the 20th century, has led to this tree being extremely rare today. A multiagency project to restore the American chestnut has begun in the region, and the National Park Service is participating.

For the last 200 years, level areas have been cleared of native vegetation and planted with crops such as flax, corn, tobacco, or others. Nonnative trees and shrubs were planted by homesteaders for decoration or other purposes. There are reports of the Civilian Conservation Corps planting nonnative fescue grass seed at the Boyhood Home Unit and throughout the region in the 1930s. Invasive noxious weeds have appeared on disturbed lands unless the land has been treated or planted with native species. Nonnative plants become a problem when they force out native species and upset natural ecological processes.

3.7.4.2 Environmental Consequences

ALTERNATIVE A (No Action/Continue Current Management)

Analysis. Under Alternative A, the National Park Service would maintain the Boyhood Home Unit essentially in its current state. No new land disturbing activities would be undertaken. Consequently new impacts to vegetation would be negligible. Impacts to vegetation would continue as a result of normal background levels of decline and mortality, and some additional impacts would result from small levels of trampling by

people visiting the tavern area and nearby fields. Impacts would be long-term, direct, negligible to minor, and adverse.

Cumulative Effects. Continuing current management would not add to the ongoing modification or loss of vegetation at the local and regional level since it calls for no new land disturbing activities. Cumulative impacts would thus be long-term, direct, negligible, and adverse.

Conclusion. No new impacts to vegetation would occur because no new land disturbing activities would be undertaken. Some ongoing impacts to vegetation would continue as a result of small levels of trampling by people visiting the tavern area and nearby fields. Impacts would be long-term, direct, negligible to minor, and adverse. Cumulative impacts would be long-term, direct, negligible, and adverse.

ALTERNATIVE B (Rehabilitate the Historic Lincoln Tavern and Upgrade Facilities at Boyhood Home Unit) (Preferred Alternative):

Analysis. Alternative B would generate new impacts to vegetation due to construction of new walkways near the tavern, construction of a new parking area in the existing grass island, and improvement and restoration of existing and former trails, especially the Overlook and Lincoln Memorial trails. Vegetation would be lost outright (removed and replaced with pavement) in the case of the new walkways and parking area. Similarly, the new trail improvements would result in some vegetation removal and trimming in order to establish clearly discernable and usable routes. However, the amount of vegetation to be removed or trimmed in all of these projects is small and would consist mostly of grasses (including non-native species) and other understory vegetation.

Virtually all of the areas affected would be considered already disturbed. However, parking lot expansion would represent long-term, or permanent, removal of vegetation. The overall impact on vegetation would be reduced by concentrating the area of disturbance to the smallest area necessary to complete the project.

Heavy equipment may cause temporary disturbance in adjacent areas beyond the footprint of the construction sites. There would also be localized vegetation disturbance from foot traffic during vegetation clearing and construction activities. Repeated disturbance of vegetation (i.e., due to vehicle passes or foot traffic) during construction in areas where plants are not cleared would cause damage to plants and disturbance to ground cover. All disturbed areas would be revegetated using native plant materials.

Exotic plants or seeds could be brought to the site with fill material or on construction machinery. New introductions could allow for exotic plants to become established and spread, especially in areas where the ground is disturbed by construction activities, and their proximity to native vegetation communities would represent a new threat to native habitats. Exotic plants currently growing in the area can also become established and spread on newly disturbed substrates. However, mitigation to ensure that imported

material does not contain exotic plant material would be implemented, and heavy equipment should be cleaned so that it is weed-free before entering the project area.

Federal or State-listed plant species, or their habitats, would not be impacted as none are expected to occur in the vicinity of the project areas.

On balance, impacts to vegetation would be short- and long-term, direct, minor, and adverse.

Cumulative Effects. Alternative B would add to the ongoing loss of vegetation at the local and regional level resulting from human land disturbing activities. The contribution of this alternative to such ongoing soil loss would be negligible since it calls for only limited vegetation removal and trimming. Cumulative impacts would thus be long-term, direct, negligible, and adverse.

Conclusion. Alternative B would result in the loss of vegetation (mostly grasses and understory vegetation) in localized areas. Impacts to vegetation would be short- and long-term, direct, minor, and adverse. Cumulative impacts would be long-term, direct, negligible, and adverse.

3.7.5 PUBLIC HEALTH AND SAFETY

3.7.5.1 Affected Environment

The grounds at the Boyhood Home Unit are generally available to visitors, although the historic Lincoln Tavern is closed pending concerns regarding the structural integrity of the building. The site currently lacks a potable water supply. Moreover, some areas near the tavern and replica cabin are not fully accessible to visitors with mobility impairments.

The trails in the forested part of the unit need to be upgraded and improved to allow visitors to travel the unit more easily and to reduce the risk of injury. On-site conditions and facilities do not meet health and safety standards required by the National Park Service.

3.7.5.2 Environmental Consequences

ALTERNATIVE A (No Action/Continue Current Management)

Analysis. Under this alternative, the National Park Service would ensure the safety of the public and park staff by keeping the historic Lincoln Tavern closed to all public entry and limiting staff entry as necessary and appropriate. Allowing the public to view the structure from outside, while preventing actual entry into the tavern, should be sufficient to protect public health and safety. Safety issues for mobility-impaired visitors would remain, as they would for visitors using the forested parts of the unit. Impacts to public health and safety would be long-term, direct, minor, and adverse.

Cumulative Impacts. Continuing current management would mean reliance on past stabilization measures and ongoing closures to protect public health and safety. Scarce resources would continue to be focused on protecting public health and safety in this area, rather than focusing on other areas where these resources may be needed. Cumulative impacts would be long-term, direct, minor, and adverse.

Conclusion. Continuing current management would protect public health and safety in the area of the historic Lincoln Tavern, but would do so by relying on short-term measures rather than permanent rehabilitation and repairs. Some safety issues would remain for mobility-impaired visitors and visitors hiking the forested parts of the Boyhood Home Unit. Impacts to public health and safety would be long-term, direct, minor, and adverse. Cumulative impacts would be long-term, direct, minor, and adverse.

ALTERNATIVE B (Rehabilitate the Historic Lincoln Tavern and Upgrade Facilities at Boyhood Home Unit) (Preferred Alternative):

Analysis. Modifications to the historic Lincoln tavern under Alternative B would include installation of plumbing, mechanical, security, fire detection, and fire suppression systems. These modifications also would provide for a safe means of visitor egress, and would help ensure the health, comfort, safety, and security of visitors and park staff, as well as complying with applicable building and safety codes. Rehabilitation would allow recurring preservation work to be performed in a safe environment. Similarly, improvements to the trails would reduce risks of visitor injury and minimize exposure to hazardous conditions. New walkways near the tavern and replica cabin would enhance the safety of mobility-impaired visitors. Overall, impacts to public health and safety would be long-term, direct, and beneficial.

Cumulative Impacts. Rehabilitating and restoring the historic Lincoln tavern would reduce risk to public health and safety by making the structure structurally sound. Resources currently diverted to protecting public health and safety at the tavern could be re-focused to other park structures areas where such resources are needed. Cumulative impacts would be long-term, direct, and beneficial.

Conclusion. Restoration and rehabilitation of the Historic Tavern would allow the structure to be safely re-opened for public use. Alternative B would address safety issues related to use of the Boyhood Home Unit by mobility-impaired visitors and visitors hiking the unit's forested areas. Direct and cumulative impacts to public health and safety would be long-term and beneficial.

3.7.6 VISITOR USE AND EXPERIENCE

3.7.6.1 Affected Environment

The unit is open daily during daylight hours year round. Interpretive staff occupy a ranger station and provide orientation, roving contacts, and informal interpretive talks from April 1 until October 31.

The valley and creeks remain much as they were in Lincoln's time. A replica cabin and tavern building built in the 1930s remain on the site. The National Park Service has restored and repaired the replica cabin and has stabilized the tavern. Stabilization efforts preclude opening this structure to visitors.

A picnic area with tables is provided for visitors; however, there is currently no approved source of potable water. The trails in the forested part of the unit need to be upgraded and improved to allow visitors to travel the unit more easily and to reduce the risk of injury.

Since 1942, a Boy Scout of America hiking trail, the 33-mile Kentucky Lincoln Trail, linked Elizabethtown, Kentucky, through the Boyhood Home Unit to the Birthplace Unit. The Lincoln Memorial Trail was the 14-mile section linking the two park units. The trail has not been used in recent years and the section located on the Boyhood Home Unit is no longer evident. NPS managers would like to re-develop and maintain the trail section located on the Boyhood Home Unit. Re-opening the trail would encourage hiking and the opportunity to provide environmental awareness and interpretive programs.

3.7.6.2 Environmental Consequences

ALTERNATIVE A (No Action/Continue Current Management)

Analysis. Continuing current management would mean that the historic Lincoln Tavern would remain closed to visitation and visitors could only experience the tavern from the outside. Opportunities would thus be lost for interpreting the tavern and its role in the development of early 20th century automobile tourism. Visitors would also have fewer opportunities to experience the forested portions of the Boyhood Home Unit on safe trails meeting NPS design standards. Impacts to visitor use and experience would be long-term, direct, moderate, and adverse.

Cumulative Impacts. Continuing current management would undermine local and regional efforts to preserve structures associated with the Abraham Lincoln and interpret them for the public. Cumulative impacts would be long-term, direct, moderate, and adverse.

Conclusion. Continued closure of the historic Lincoln Tavern and failure to upgrade trails and other site facilities would limit visitor opportunities to experience and learn from the Boyhood Home Unit. Impacts to visitor use and experience would be long-term,

direct, moderate, and adverse. Cumulative impacts would be long-term, direct, moderate, and adverse.

ALTERNATIVE B (Rehabilitate the Historic Lincoln Tavern and Upgrade Facilities at Boyhood Home Unit) (Preferred Alternative):

Analysis. Visitor services and enjoyment would be enhanced under this alternative. Installation of mechanical systems, rehabilitation and restoration of some interior spaces, and addition of new exhibits would allow the first floor of the tavern building to be opened to visitors, further enhancing the park's interpretive program. By using the historic Lincoln Tavern as a vital part of the interpretive program, the role of the Boyhood Home Unit in Abraham Lincoln's life and in the development of Lincoln iconography and tourism could be better explained to the public. The visitor experience would be expanded and enhanced, and increased visitation could be more easily accommodated. Rehabilitation and restoration would also better enable the park to meet its goals under the Government Performance and Results Act.

Upgrading trails to meet NPS design standards would give visitors more opportunities to experience forested portions of the Boyhood Home Unit, encourage hiking, and increase the ability of park staff to provide environmental awareness and interpretive programs.

Overall, impacts to visitor use and experience would be long-term, direct, and beneficial.

Cumulative Impacts. Restoring and rehabilitating the historic Lincoln Tavern and opening it to public visitation would contribute to ongoing efforts locally and regionally to preserve and interpret historic structures associated with the early years of Abraham Lincoln. This, together with other site improvements, would result in cumulative impacts to visitor use and experience would be long-term, direct, and beneficial.

Conclusion. Opening the historic Lincoln Tavern and upgrading trails and other site facilities would dramatically improve visitor opportunities to experience and learn from the Boyhood Home Unit. Impacts to visitor use and experience would be long-term, direct, and beneficial. Cumulative impacts would be long-term, direct, and beneficial.

3.7.7 PARK OPERATIONS AND MANAGEMENT

3.7.7.1 Affected Environment

There are 13 full-time equivalent employees at Abraham Lincoln National Historical Park to provide interpretation and education, administration, grounds keeping, and facility management at the park's two units. Seasonal employees, cooperating association employees, and volunteers assist the permanent staff.

Personnel are responsible for managing an average of about 200,000 visitors each year and the cultural and natural resources on 345 acres of NPS land. The historic site's base funding was \$962,000 in fiscal year 2006.

Interpretation and education programs are centered on the visitor center and memorial cabin at the Birthplace Unit. The visitor center desk is staffed, and there is an interpreter in the memorial building at all times the national historic site is open. An interpretation ranger is stationed at the boyhood home during the primary visitor season.

Both units are day use only and closed at night. There are no commissioned law enforcement rangers on staff. Law enforcement is currently provided by personnel from the local sheriff's office or Mammoth Cave National Park when requested.

The Boyhood Home Unit is 10 miles away from the birthplace, so maintenance crews must travel 20 miles round-trip to do work at this unit. A small pre-fabricated building has been moved onto the site to serve as a temporary visitor contact station and ranger office. Operations staff maintains the driveway/ parking area, temporary office, and grounds.

3.7.7.2 Environmental Consequences

ALTERNATIVE A (No Action/Continue Current Management)

Analysis. Under the No Action Alternative, the park's maintenance and repair workload would continually increase to keep the tavern structure from significant deterioration. This would result in long-term, moderate, adverse effects on park operations where the escalating deterioration would divert staff from other necessary park functions, and could be noticeable by the public.

Cumulative Impacts. Future projects planned for the park could reduce impacts on park operations by producing efficiencies and lessening the need for major repairs and maintenance actions. The No Action Alternative would detract from the cumulative beneficial effects of these projects on park operations by failing to address the major maintenance workload posed by continued deterioration of the tavern structure. Cumulative impacts would be long-term, direct, minor to moderate, and adverse.

Conclusion. Ongoing repair and maintenance of the historic Lincoln Tavern would create long-term, direct, adverse effects on park operations of moderate intensity as the escalating deterioration diverted staff from other necessary park functions.

ALTERNATIVE B (Rehabilitate the Historic Lincoln Tavern and Upgrade Facilities at Boyhood Home Unit) (Preferred Alternative):

Analysis. Under Alternative B, rehabilitation, restoration, and repair of the historic Lincoln Tavern would produce long-term beneficial benefits on park operations. These

benefits would result from a reduction in park maintenance and repair needs based on the following:

- Long-term maintenance needs would decrease, and longer intervals could be scheduled between cyclic maintenance operations. Reactive repair could be replaced with regularly scheduled maintenance activities.
- Staff time to monitor hazards and safety issues could be reduced.
- Short-term adverse effects of negligible to minor intensity would be generated by the need to manage the rehabilitation contractor and project, and some staff time would be required in implementation of the project. These increased burdens would end when project construction ended.
- The park's operational efficiency and sustainability would be improved by using sustainable building materials, and long-term maintenance efforts would be reduced by enhancing the long-term stability of the structure. The presence of fire detection, fire suppression, and security systems would help prevent structural loss or damage by fire or vandalism. Intrusion alarms would allow the park to identify potential vandalism before severe damage was done, reducing the amount of park staff time needed to maintain the building.

These beneficial impacts would be slightly offset by increased costs and staff time required to maintain new walkways and upgraded trails at the Boyhood Home Unit. Overall, impacts to park operations and management would be long-term, direct, and beneficial.

Cumulative Impacts. Future projects planned for the park could reduce impacts on park operations by producing efficiencies and lessening the need for major repairs and maintenance actions. Alternative B could reinforce the cumulative beneficial effects of these projects on park operations by reducing the long-term maintenance workload posed by the historic tavern. Cumulative impacts would be long-term, direct, and beneficial.

Conclusion. Under Alternative B, park operations would experience long-term, direct benefits as the need for major maintenance repair was reduced. Emergency repair activities would be replaced by lower-intensity regular maintenance, and staff could focus their attention on other resource and park management matters. These beneficial impacts would be slightly offset by increased costs and staff time required to maintain new walkways and upgraded trails at the Boyhood Home Unit. Direct and cumulative impacts to park operations and management would be long-term and beneficial.

3.7.8 SUSTAINABILITY AND LONG-TERM MANAGEMENT

Consideration of long-term impacts and the effects of foreclosing future options are addressed in this section. The intent of this analysis is to identify sustainable development that meets the needs of the present without compromising the ability of future generations

to meet their needs. Included in the analysis is an assessment of the energy requirements of the project and the potential for energy conservation.

Unavoidable Adverse Impacts

The intent of this determination is to identify whether the proposed action or alternatives would result in impacts that could not be fully mitigated or avoided. In the present case, rehabilitation of the tavern for use as a visitor contact station would have minor adverse impacts on the historic structure, but these impacts are outweighed by the benefits of improving access to the structure.

Relationship of Short-Term Uses and Long-Term Productivity

The intent of this determination is to identify whether the proposed action or alternatives would result in trading the immediate use of the land for any long-term management possibilities or the productivity of park resources that would affect future generations. It is intended to determine whether the proposed action or alternatives would be sustainable actions that could continue over the long-term without environmental problems.

Under Alternative B, the park's operational efficiency and sustainability would be improved by using sustainable building materials, and long-term maintenance efforts would be reduced because of the use of new materials (where necessary and appropriate) and techniques to restore and rehabilitate the tavern structure.

Irreversible or Irrecoverable Commitments of Resources

The intent of this evaluation is to identify whether the proposed action or alternative would result in effects that could not be changed over the long term or would be permanent. An effect on a resource would be irreversible if the resource could not be reclaimed, restored, or otherwise returned to its condition before the disturbance. An irretrievable commitment of resources involves the effects on resources that, once gone, cannot be replaced or recovered. In the present instance, the intent of the project is, in significant part, to preserve, restore, and rehabilitate the historic Lincoln Tavern. Alternative B would not result in irreversible or permanent impacts or cause a permanent commitment of resources.

4.0 CONSULTATION AND COORDINATION

Scoping is the effort to involve agencies and the general public in determining the issues to be addressed in the environmental document. Among other tasks, scoping determines important issues and eliminates issues not important; allocates assignments among the interdisciplinary team members and other participating agencies; identifies related projects and associated documents; identifies other permits, surveys, or consultations required by other agencies; and creates a schedule which allows adequate time to prepare and distribute the environmental document for public review and comment before a final decision is made. Scoping includes early input from any interested agency or any agency with jurisdiction by law or expertise. At a minimum for National Park Service projects, agency scoping includes input from the Advisory Council on Historic Preservation, the State Historic Preservation Officer, and the U.S. Fish and Wildlife Service.

The Kentucky State Historic Preservation Office has been involved in this project from its inception. Letters have been sent to the SHPO and to the Advisory Council on Historic Preservation inviting their participation in this project. Comments received from the SHPO will be reflected in the final compliance documents.

The U.S. Fish and Wildlife Service has been contacted by letter regarding this project. The Service responded to this consultation letter with information regarding the potential presence of certain federally listed endangered, threatened, or candidate species in the project area (see Appendix A).

PLANNING TEAM PARTICIPANTS

Keith Pruitt
Superintendent
Abraham Lincoln National Historical Park

Scott Shultz
Chief of Interpretation and Resource Management
Abraham Lincoln National Historical Park

Jennifer L. Jones
Park Ranger (Interpretation)
Abraham Lincoln National Historical Park

Tim Bemisderfer
Landscape Architect
National Park Service, Southeast Regional Office

Mark Kinzer
Environmental Protection Specialist
National Park Service, Southeast Regional Office

Preparers

Mark Kinzer
Environmental Protection Specialist
National Park Service, Southeast Regional Office

Tim Bemisderfer
Landscape Architect
National Park Service, Southeast Regional Office

Keith Pruitt
Superintendent
Abraham Lincoln National Historical Park

REFERENCES

The following documents contain information or data related to this environmental assessment.

- National Park Service (NPS). 1995a. *Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation*.
- 1995b. *Secretary of the Interior's Standards for the Treatment of Historic Properties*.
1998. *Long Range Interpretive Plan, Abraham Lincoln National Historical Park*.
2001. *Director's Order (DO) #12 and Handbook: Conservation Planning, Environmental Impact Analysis, and Decision Making*.
- 2006a. *Final General Management Plan and Environmental Impact Statement, Abraham Lincoln National Historical Park..*
- 2006b. *Final Historic Structure Report, Lincoln Tavern, Abraham Lincoln National Historical Park..*
- 2006c. *National Park Service Management Policies 2006*.
- NPS Southeast Archeological Center (SEAC). 2008. Trip report on Phase I and Phase II testing of the Abraham Lincoln Boyhood Home Site (ABLI-2, 15Lu50) at the Knob Creek Unit, Abraham Lincoln Birthplace National Historic Site, Hodgenville, KY, January 7-20, 2008. SEAC Acc. 2148.
- Soil Conservation Service, U.S. Department of Agriculture. 1979. "Soil Survey of Hardin and Larue Counties, Kentucky." Soil Conservation Service (Kentucky office) in cooperation with Kentucky Agricultural Experiment Station.

APPENDIX A

Correspondence from Government Agencies



STEVEN L. BESHEAR
GOVERNOR

**TOURISM, ARTS AND HERITAGE CABINET
KENTUCKY HERITAGE COUNCIL**

MARCHETA SPARROW
SECRETARY

THE STATE HISTORIC PRESERVATION OFFICE
300 WASHINGTON STREET
FRANKFORT, KENTUCKY 40601
PHONE (502) 564-7005
FAX (502) 564-5820
www.heritage.ky.gov

MARK DENNEN
EXECUTIVE DIRECTOR AND
STATE HISTORIC PRESERVATION OFFICER

November 24, 2009

Keith Pruitt, Superintendent
National Park Service
Abraham Lincoln Birthplace National Historical Park
2995 Lincoln Farm Rd.
Hodgenville, KY 42748

**Re: Rehabilitation/Restoration of Resources at the Abraham Lincoln Birthplace
National Historical Park in LaRue County, Kentucky**

Dear Mr. Pruitt,

The State Historic Preservation Office has received the above referenced request for review and comment. According to your letter dated Sept. 16, 2009, this undertaking will result in the rehabilitation/restoration of the tavern, cabin and parking area at the park's Boyhood Home Unit.

The Lincoln Boyhood Home, which includes the historic tavern, is listed on the National Register of Historic Places. Based on a review of the information you submitted, it is our determination that your selections of Alternative 4 for the Tavern, Alternative 2 for the site lay-out and Alternative 1 for mechanical work will have **No Adverse Effect** on historic properties. Work involving the Tavern, including repair of logs, lead-based paint abatement at windows, etc., should be conducted according to the Secretary of the Interior's Standards for the Treatment of Historic Properties.

We apologize for the delay in responding to this request. Further consultation would only be required if the selected alternatives change. If you have questions regarding these comments, please contact Jill McNutt of my staff at (502) 564-7005, extension 121.

Sincerely,

Mark Dennen
Executive Director and
State Historic Preservation Officer

MD:jm

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STEVEN L. BESHEAR
GOVERNOR

**TOURISM, ARTS AND HERITAGE CABINET
KENTUCKY HERITAGE COUNCIL**

MARCHETA SPARROW
SECRETARY

THE STATE HISTORIC PRESERVATION OFFICE
300 WASHINGTON STREET
FRANKFORT, KENTUCKY 40601
PHONE (502) 564-7005
FAX (502) 564-5820
www.heritage.ky.gov

MARK DENNEN
EXECUTIVE DIRECTOR AND
STATE HISTORIC PRESERVATION OFFICER

June 2, 2010

Keith Pruitt, Superintendent
National Park Service
Abraham Lincoln Birthplace National Historical Park
2995 Lincoln Farm Rd.
Hodgenville, KY 42748

**Re: Development of the Boyhood Home Unit at the Abraham Lincoln Birthplace
National Historical Park in LaRue County, Kentucky**

Dear Mr. Pruitt,

The State Historic Preservation Office has received your recent correspondence related to plans for developing the Boyhood Home Unit. According to your letter dated May 7, 2010, plans previously submitted to our office for review have been expanded to include installation of connecting walkways, construction of a garden, and restoration/improvement of existing walking trails.

We are interested in participating in your planning effort and will look forward to receiving your draft environmental assessment for Section 106 review. If we can be of any assistance in the meantime, please do not hesitate to contact us.

Questions regarding these comments may be directed to Jill McNutt of my staff at (502) 564-7005, extension 121.

Sincerely,

Mark Dennen
Executive Director and
State Historic Preservation Officer

MD;jm

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
Kentucky Ecological Services Field Office
330 West Broadway, Suite 265
Frankfort, Kentucky 40601
(502) 695-0468

May 17, 2010

Mr. Keith Pruitt
Superintendent
United States Department of Interior, National Park Service
Abraham Lincoln Birthplace National Historic Park
2995 Lincoln Farm Road
Hodgenville, Kentucky 42748

Re: FWS 2010-B-0545; National Park Service, Species List for Development of the Boyhood Home Unit of the Abraham Lincoln National Park, located in Larue County, Kentucky

Dear Mr. Pruitt:

Thank you for your correspondence of May 7, 2010, requesting a list of federally listed species and species of special concern which are known to occur or may occur within the vicinity of the Boyhood Home Unit of the Abraham Lincoln National Park. The U.S. Fish and Wildlife Service (Service) offers the following comments in accordance with the Endangered Species Act (ESA) of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*).

According to your correspondence, the proposed project would include the modification of a parking area, installation of walkways, construction of a garden, and restoration and improvement of existing walking trails. Because a site-specific project map was not provided, the Service cannot make site-specific project recommendations. However, the Service has searched our database and compiled a list of federally listed species, and species of special concern that are known to occur or have the potential to occur within the area of interest.

<u>Common Name</u>	<u>Scientific Name</u>	<u>Federal Status</u>
Indiana bat	<i>Myotis sodalis</i>	endangered
gray bat	<i>Myotis grisescens</i>	endangered

We must advise you that collection records available to the Service may not be all-inclusive. Our database is a compilation of collection records made available by various individuals and resource agencies. This information is seldom based on comprehensive surveys of all potential habitats and thus does not necessarily provide conclusive evidence that protected species are present or absent at a specific locality.

Summer roost and/or winter habitat for the endangered Indiana bat may exist within the area of interest. Based on this information, we believe that: (1) forested areas in the vicinity of and on the project area may provide potentially suitable summer roosting and foraging habitat for the Indiana bat; and (2) caves, rockshelters, and abandoned underground mines in the vicinity of and on the project area may provide potentially suitable wintering habitat (hibernacula) for the Indiana bat. Our belief that potentially suitable habitat may be present is based on the information provided in your correspondence, the fact that much of the project site and/or surrounding areas contain forested habitats that are within the natural range of this species, and our knowledge of the life history characteristics of the species.

The area of interest may be inhabited by the federally endangered gray bat. The gray bat may utilize the low flow stream corridors of Knob Creek as foraging habitat. Potential gray bat hibernacula / summer roost habitat (*i.e.*; caves, rock shelters, and abandoned mines) may also occur within the area of interest.

Should the proposed project require alteration of habitat that coincides with the habitat required for the Indiana bat and/or the gray bat further consultation with the Service should occur to ensure that the proposed project is in full compliance with the ESA.

Thank you again for your request. Your concern for the protection of endangered and threatened species is greatly appreciated. If you have any questions regarding the information that we have provided, please contact James Gruhala at (502) 695-0468 extension 116.

Sincerely,



Virgil Lee Andrews, Jr.
Field Supervisor

APPENDIX B – IMPAIRMENT DETERMINATION

Rehabilitate Historic Lincoln Tavern and Upgrade Facilities at Boyhood Home Unit

IMPAIRMENT DEFINED

The fundamental purpose of the National Park System, established by the Organic Act and reaffirmed by the General Authorities Act, as amended, begins with a mandate to conserve park resources and values. NPS managers must always seek ways to avoid or minimize to the greatest degree practicable adverse impacts on park and monument resources and values. However, the laws do give NPS management discretion to allow impacts to park resources and values when necessary and appropriate to fulfill the purposes of a park, as long as the impact does not constitute impairment of the affected resources and values. Although Congress has given NPS management discretion to allow certain impacts within parks, that discretion is limited by statutory requirement that the NPS must leave park resources and values unimpaired, unless a particular law directly and specifically provides otherwise. The prohibited impairment is an impact that, in the professional judgment of the responsible NPS manager, would harm the integrity of park resources or values, including opportunities that otherwise would be present for the enjoyment of those resources or values. An impact to any park resource or value may constitute impairment. However, an impact would more likely constitute impairment to the extent it affects a resource or value whose conservation is:

- necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park;
- key to the natural or cultural integrity of the park or to opportunities for enjoyment of the
- park; or
- identified as a goal in the park's General Management Plan or other relevant NPS planning documents.

Impairment may result from NPS activities in managing the park, visitor activities, or activities undertaken by concessionaires, contractors, and others operating in the park.

HOW IS AN IMPAIRMENT DETERMINATION MADE?

NPS Management Policies 2006 directs decision makers to use professional judgment in making an impairment determination. This means that the decision maker must consider any environmental assessment or analyses required under NEPA, consultations required under Section 106 of the National Historic Preservation Act, relevant scientific and scholarly studies, advice and insights offered by subject matter experts, and the results of public involvement activities. Park resources and values that may be impaired include scenery; natural and historic objects; wildlife and the habitats that sustain them; ecological, biological, and physical processes; natural visibility; natural landscapes and soundscapes; water and air resources; wilderness resources and values; paleontological resources; archeological resources; cultural landscapes; ethnographic resources; historic

and prehistoric sites, structures, and objects; museum collections; and native plants and animals. Impairment findings are not necessary for visitor experience, socioeconomics, public health and safety, environmental justice, land use, and park operations, etc. because impairment findings relate to park resources and values. These impacts areas are not generally considered to be park resources or values according to the Organic Act.

PURPOSE AND SIGNIFICANCE OF ABRAHAM LINCOLN NATIONAL HISTORICAL PARK

Park Purpose

Abraham Lincoln National Historical Park was established by Congress in 1916 to:

- Protect and preserve the significant resources of the birthplace of Abraham Lincoln, especially the Log Cabin, Memorial Building, lands and related features.
- Protect and preserve the significant resources associated with the Knob Creek Farm and the early boyhood of Abraham Lincoln.
- Commemorate the birth and early life of Abraham Lincoln and interpret the relationship of his background and pioneer environment to his service for his country as president of the United States during the crucial years of the Civil War.

39 Stat. 385 (1916).

Park Significance

Abraham Lincoln National Historical Park is nationally significant because:

- This is the birthplace and early boyhood home of the 16th president of the United States who successfully preserved the Union through the turmoil of the Civil War.
- The park protects a formal landscape and the memorial building that was constructed by the Lincoln Farm Association through popular subscription to formally enshrine and preserve a symbolic birthplace cabin.
- The Boyhood Home Unit at Knob Creek preserves the setting and resources of Abraham Lincoln's early character-building years (1811-1816).
- The Boyhood Home Unit protects unusually diverse and abundant flora in the Piedmont Region representative of the mixed mesophytic forest community along with cedar glades.

IMPAIRMENT DETERMINATION FOR PROPOSAL TO DEVELOP FACILITIES AT BOYHOOD HOME UNIT

As directed by the NPS, in a memorandum dated July 6, 2010, an impairment determination must be completed for each resource impact topic carried forward and analyzed for the Preferred Alternative or selected action. The determination must include:

- 1) A brief description of the resource condition
- 2) whether the resources is necessary to fulfill the park's purpose

- 3) whether the resource is key to the natural or cultural integrity, or opportunity for enjoyment, of the park
- 4) whether the resource is identified as a significant resource
- 5) a “because statement” as to why the proposed action would or would not result in impairment of the resource

Four impact topics subject to the impairment determination were retained for analysis in the EA for proposed development at the Boyhood Home Unit. The table below lists the topics and indicates the impairment determination for each.

Table B1. Impairment Determination Summary for the Boyhood Home Development EA

Resource Topic	Is this resource necessary to fulfill the park’s purpose or key to the park’s resource integrity?	Would impairment of the resource result from implementation of the Preferred Alternative?
Historic structures	Yes	No
Cultural landscapes	Yes	No
Soils	Yes	No
Vegetation	Yes	No

Historic Structures

The Boyhood Home Unit contains a National Register of Historic Places Historic District that is significant for its local history. The district consists of the historic Lincoln Tavern, a replica of the Lincoln boyhood home, and a small area around these structures. The district is significant for its role in the history of LaRue County tourism and its place in Abraham Lincoln iconography. The Lincoln Tavern is a 1 ½ story log and concrete, asymmetrical building with an exterior constructed from unhewn logs with saddle and V-notching and concrete chinking. The west facade features a prominent limestone block chimney, and at the rear is a 1-story addition. The tavern was built in 1933 and served for many years as a local tourist attraction and entertainment center. About the same time the tavern was constructed, the replica of the Lincoln Boyhood Home was constructed. This rectangular single-pen log building consists of hewn logs with mud and rock slat chinking and a prominent log and mud chimney.

The historic Lincoln Tavern, which would be restored and rehabilitated as part of the proposed action, is necessary to fulfill the park’s purpose because the Boyhood Home Unit was expressly established to protect and preserve the significant resources associated with the Knob Creek Farm and the early boyhood of Abraham Lincoln. Protecting the historic structures contained in the Unit is key to the historical integrity, and opportunity for enjoyment, of Knob Creek Farm.

With careful restoration and rehabilitation, the historic Lincoln Tavern can be brought once more to good condition. The construction activities associated with the Preferred Alternative would necessitate some changes to the structure in order to adapt it for use as a visitor contact station. However, the façade of the structure would remain essentially unchanged or be restored, and the interior changes would be relatively minor. The proposed work would also correct structural deficiencies, thereby allowing the long-term preservation of this important National Register property.

Conclusion. The project would **not impair** historic structures because the historic Lincoln Tavern would be improved from its current substandard and deteriorating condition. The structure would be restored and rehabilitated in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties* (NPS 1995b).

Cultural landscapes

No cultural landscape report has been done for the Boyhood Home Unit. However, the historic Lincoln Tavern appears to fall within two categories of cultural landscapes, namely, (1) historic sites, and (2) historic designed landscapes. The tavern is listed on the National Register of Historic Places. The structure has been listed because of its role in the history of LaRue County tourism and its place in Abraham Lincoln iconography. Furthermore, the tavern building is located within a historic designed landscape. This landscape includes the parking area and associated walkways designed to facilitate visitation of the tavern. It also includes the replica cabin situated a short distance from the tavern and parking area.

The cultural landscape of the Boyhood Home Unit is relatively intact. The principal non-historic intrusion is the temporary visitor contact station located between the tavern and the replica cabin. This structure was constructed soon after the Boyhood Home property was transferred to the National Park Service.

The cultural landscape of the Boyhood Home is necessary to fulfill the park's purpose because a principal purpose of the Unit is to protect and preserve the landscape where Abraham Lincoln spent his early boyhood, and where local citizens subsequently commemorated his life. Protecting the cultural landscape of the Unit is an important component of maintaining the historical integrity and opportunities for enjoyment of Knob Creek Farm.

Conclusion. The project would **not impair** the cultural landscape of the Boyhood Home Unit. The existing landscape would be preserved in its current, good condition, except that the nonconforming visitor contact station presently at the site would be removed. The preferred alternative would thus enhance the cultural landscape of the Boyhood Home Unit.

Soils

Soils at the Boyhood Home Unit are composed of Sensabaugh silt loam, Garmon silt loams, Hagerstown silt loam, and Caneyville-Rock outcrop complex (see Table 3.2).

SOILS AT BOYHOOD HOME UNIT

Name	Slope	Location	Restrictions
SENSABAUGH SILT LOAM	LEVEL	BOTTOMLANDS	SEVERE RESTRICTIONS FOR ALL CONSTRUCTION BECAUSE OF FLOODING.
GARMON SILT LOAMS	25 TO 60%	SIDE SLOPES	SEVERE FOR ALL CONSTRUCTION BECAUSE OF SLOPES
HAGERSTOWN SILT LOAM	2 TO 12%	TOP OF KNOBS	MODERATE FOR ALL CONSTRUCTION BECAUSE OF SLOPES, LOW STRENGTH AND SHALLOW DEPTH TO ROCK
CANEYVILLE-ROCK OUTCROP COMPLEX	6 TO 30%	TOP OF KNOBS	SEVERE FOR BUILDINGS AND MODERATE FOR ROADS BECAUSE OF LOW STRENGTH, HIGH SLOPES, ROCK

Source: Soil Conservation Service (1979)

Soils on the flatter surfaces of the Boyhood Home Unit have a long history of disturbance by human activities, including agriculture and various types of construction.

The soil resource at the Boyhood Home Unit is necessary to fulfill the purposes of Abraham Lincoln Boyhood Home National Historical Park because it sustains and makes possible the diverse forest and field biota that the park is charged with protecting. For this same reason, the soil resource is key to the natural integrity, and opportunity for enjoyment, of the park. The soil resource at the project sites is in generally good condition, although it has been subject to prior human disturbance.

The Preferred Alternative would entail some minor disturbance of soils during construction of an expanded parking lot, upgrading trails, installing walkways, removing the existing visitor contact station, and staging equipment. Site preparation would require some minor grading, excavation, and filling. This would occur in soil that has been previously disturbed. It is possible that some previously undisturbed soils may be disturbed by compaction from heavy and light equipment, hand tools, soil removal, or soil erosion. However, the majority of disturbance would occur in previously disturbed areas. With the application of appropriate BMPs as listed under Mitigation Measures in Section 2.4 during construction, adverse soil impacts would be minimized.

Long-term adverse impacts would be associated with soil compaction and loss of soil function from construction of an expanded parking area and walkways. since soils would

be covered with gravel and/or other man-made surfaces. These impacts would generally be minor due to the disturbed nature of the soils at the sites and existing soil compaction in some areas.

Conclusion: The project would **not impair** the soil resource because adverse impacts from construction activities and new facilities would be minor and would occur for the most part in areas previously disturbed by human activities. Furthermore, the project would reduce erosion from existing trails by upgrading them in accordance with current design standards. The project would thus have beneficial impacts to the soil resource in these locations.

Vegetation

Central Kentucky is in a transition zone between the southern hardwood forests and the northern plains. The Boyhood Home Unit is also in an ecotone, or transition zone, between the Mississippian Plateau and the Knobs Region of Kentucky. Because of this, there is an unusually diverse and abundant community of flora at this unit. The north-eastern corner of the Birthplace Unit, covering about 9 acres, is an impressive old-growth oak forest.

The Boyhood Home Unit contains a variety of vegetation types including heavily vegetated slopes of red buckeye (*Aesculus pavia*) and chinquapin oak (*Quercus muehlenbergii*), mixed hardwood forest along ridgetops and Knob Creek, fields, hardwood glades, and a small area of regularly maintained lawn. The steep bluffs around Knob Creek exhibit more natural vegetation, and the lowlands have been farmed or landscaped. Some areas of vegetation on top of the south knob have been manipulated by past landowners to create habitat for game animals. Current boundaries at the Boyhood Home Unit include a portion of a rare limestone glade in the northeast corner. Glades occur on limestone outcroppings on south- or west-facing slopes. They are characterized by shallow rocky soils and a number of flowering prairie/glade plants that have adapted to the harsh, dry conditions. The glade extends onto adjacent private land. Most of the native forest in the unit has been cut down in the past to provide wood for construction or fuel, or to clear land for agriculture. In addition to other trees, settlers used wood from the American chestnut for their buildings. This use, combined with a chestnut blight that affected the eastern U.S. in the first half of the 20th century, has led to this tree being extremely rare today. A multiagency project to restore the American chestnut has begun in the region, and the National Park Service is participating.

For the last 200 years, level areas have been cleared of native vegetation and planted with crops such as flax, corn, tobacco, or others. Nonnative trees and shrubs were planted by homesteaders for decoration or other purposes. There are reports of the Civilian Conservation Corps planting nonnative fescue grass seed at the Boyhood Home Unit and throughout the region in the 1930s. Invasive noxious weeds have appeared on disturbed lands unless the land has been treated or planted with native species. Nonnative plants

become a problem when they force out native species and upset natural ecological processes

The vegetation resource at the Boyhood Home Unit is necessary to fulfill the park's purpose as it forms a major part of the environmental context experienced by Abraham Lincoln during his boyhood at the site.

Construction activities associated with the Preferred Alternative would necessitate removal of plants located at the project sites for parking lot expansion, walkway installation, and trail upgrading. Ground cover would be removed for site preparation, mostly consisting of grasses (including non-native grasses) and understory vegetation (in the case of trail upgrading). Virtually all of the areas affected would be considered already disturbed. However, parking lot expansion would represent long-term, or permanent, removal of vegetation. The overall impact on vegetation would be reduced by concentrating the area of disturbance to the smallest area necessary to complete the project.

Heavy equipment may cause temporary disturbance in adjacent areas beyond the footprint of the construction sites. There would also be localized vegetation disturbance from foot traffic during vegetation clearing and construction activities. Repeated disturbance of vegetation (i.e., due to vehicle passes or foot traffic) during construction in areas where plants are not cleared would cause damage to plants and disturbance to ground cover. All disturbed areas would be revegetated using native plant materials.

Exotic plants or seeds could be brought to the site with fill material or on construction machinery. New introductions could allow for exotic plants to become established and spread, especially in areas where the ground is disturbed by construction activities, and their proximity to native vegetation communities would represent a new threat to native habitats. Exotic plants currently growing in the area can also become established and spread on newly disturbed substrates. However, mitigation to ensure that imported material does not contain exotic plant material would be implemented, and heavy equipment should be cleaned so that it is weed-free before entering the project area.

Federal or State-listed plant species, or their habitats, would not be impacted as none are expected to occur in the vicinity of the project areas.

Conclusion: The project would **not impair** the vegetation resource because long-term adverse impacts from construction activities and new facilities would be minor, as described above. In addition, impacts would occur in areas previously disturbed by human activities. Mitigation actions would be employed to prevent the spread of invasive non-native plant species.